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Costing Child Protective Services Staff Turnover

Michelle I. Graef and Erick L. Hill

This article details the process used in one state to determine the financial costs to the child welfare agency accrued over the course of one year that were directly attributable to CPS staff turnover. The formulas and process for calculating specific cost elements due to separation, replacement and training are provided. The practical considerations inherent in this type of analysis are highlighted, as well as the use of this type of data to inform agency human resource strategies.

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Retention of child protective services staff continues to be a challenge faced by public child welfare agencies nationwide. Although national figures on the number of CPS workers who leave CPS employment yearly are not readily available, a national survey conducted in the late 1980s estimated an 8% (\pm 4%) rate of attrition for CPS workers nationwide [Fryer et al. 1989]. More recent data obtained from one midwestern state suggests an average of about 20% turnover in CPS positions annually from 1995 through 1999 [Nebraska Health and Human Services System 2000]. In an effort to understand and manage this turnover, researchers have devoted a great deal of attention to the construct of worker burnout (e.g., Armstrong [1979]; Daley [1979]; Maslach [1978]). Longitudinal research suggests that CPS worker burnout can result in high levels of worker turnover (e.g., Savicki & Cooley [1994]), although earlier studies have not found clear support for this relationship (e.g., Jayaratne & Chess [1985]). Beyond this focus on causal relationships between burnout and worker turnover, very little has been documented about the specific impact that CPS staff turnover has on child welfare agency functioning.

Even moderate levels of staff turnover can create crisis conditions in any type of work organization if there is a shortage of trained replacements readily available to assume the workload. In the child protection field, the exit of an experienced investigator or case manager can have an overwhelming effect on the workload of the remaining staff in the work unit. The challenge of providing even basic coverage for the vacated caseload, much less a level of continuity in service to those families, is a daunting task. Abundant supplies of qualified, competent applicants are often not available, and so the process of filling the staff vacancy and getting the new hire "up to speed" invariably takes longer than supervisors would like. The continuous cycle of turnover in many CPS work units means that operating understaffed has become the norm, rather than the exception.

Many agencies have instituted extensive preservice training programs designed to advance newly hired CPS staff to a minimum level of competence, including those in New York City, Los Angeles County, and Nebraska. These training programs represent a significant upfront investment of agency resources that are expended prior to gaining much in the way of productivity from the new hire. Field mentoring or "on-the-job" training (OJT) programs that utilize senior staff or supervisors to coach new trainees can involve significant expenditures of experienced staff time for developing new employee skills. If the new employee quits after only a year or two (or many times, less) of employment, the question arises as to whether the agency has recouped its investment of resources. Viewed from another perspective, given that long-term employment is not the norm for many child protection staff, what is a reasonable level of expenditure for the agency to invest in the recruitment, selection, and training of new staff? Understanding the agency's current investment in these human resource processes is an important first step in evaluating potential strategies for improving the hiring, training, and retention of staff. This article describes a method for quantifying the extent of these investments in a familiar, readily understood metric.

Costing Human Resources Activities

Methods for cost accounting of human resources began to receive attention in the 1960s and have been in limited use since that time (see Cascio [1991] for a review). Only more recently, however, have personnel psychologists focused their attention on methods for translating human resource issues into financial terms. A variety of related approaches can be used to calculate a "cost-benefit analysis," "return on investment," or "break-even analysis;" all can be seen as a family of methods under the general rubric of "utility analysis" [Boudreau 1991; Cascio 1991]. Boudreau [1991] and Cascio [1991] provide extensive treatments

of the historical development of these methods and their theoretical foundations.

These methods have been applied in a variety of contexts. For example, researchers have demonstrated the economic impact of the use of valid personnel selection procedures [Schmidt et al. 1979], and the value of human resource development or training programs (e.g., Cullen et al. [1978]; Mathieu & Leonard [1987]; McKeon [1981]). Similarly, employee behaviors such as absenteeism, smoking, and turnover can be described in terms of their financial impact on the organization (see Cascio [1991] for case examples).

Determining the costs due to turnover is becoming a common practice in many businesses. For example, Corning Glass Works calculated its out-of-pocket expenses due to employee turnover to be between \$16 and \$18 million annually. A study of the retail automobile industry reported that turnover costs averaged more than \$18,000 per salesperson [Cascio 1991]. A recent report on child support enforcement workers indicated that between the cost of hiring and retraining new child support workers and lost collection revenues, the cost of staff turnover to Georgia was over \$70 million annually [Brooks 1999]. In each of these examples, the organization's efforts to determine turnover costs lead to the development of methods to manage the controllable aspects of these costs, such as job redesign, improved recruitment and selection processes, or changes in compensation practices.

The present study used these methods to determine the actual dollar costs to a child welfare agency in one midwestern state that accrued over the course of one year and that could be attributed directly to CPS staff turnover. Utilizing a combination of the agency's human resources database and interviews with personnel directly involved in the administrative processes, the specific cost elements directly related to CPS turnover for one year were calculated. For each of these cost elements, the formulas used for calculations are provided, along with illustrative data. Follow-

ing a description of the process, practical considerations inherent in conducting this type of analysis are highlighted, as well as the use of this type of data to inform agency human resource planning.

Data Needed to Conduct the Analyses

Following Cascio [1991], three specific cost elements were identified that are directly related to CPS turnover in the agency in which the study was conducted: those due to (1) *separation* (the administrative functions necessary to process employees out of the organization once they resign); (2) *replacement* (the administrative costs resulting from the advertising, screening, interviewing, and processing necessary to fill a vacated CPS position); and (3) *training* (the costs incurred through the provision of classroom and field training provided as preservice training required for all new CPS hires). The basic formulas provided in Cascio [1991] and McKeon [1981] were adapted to accurately represent the specific agency's processes. In general, the cost estimates for each of these three categories are a function of (1) the time needed to perform the task(s) involved in the process; (2) the level of pay of the individuals involved in each task; and (3) material costs. Table 1 lists the processes that were analyzed and examples of the types of data included in calculating each of the three cost elements.

Some of the data elements listed in table 1 represent information that is typically available through administrative databases, namely payroll costs, numbers of applicants, length of training sessions, and the like. Other data necessary for these analyses are not readily available, however, such as specific estimates of the amount of time needed to process an exiting employee out of the system. For these data elements, estimates must be obtained through interviews with those directly involved in the process or through direct observation of the process. When estimating time elements, agency personnel were asked to estimate the average

TABLE 1**Turnover Costs elements and Processes Analyzed**

<i>Cost Element</i>	<i>Includes Costs Associated with Process of:</i>	<i>Data Required</i>
<i>Separation</i>	<ul style="list-style-type: none"> • Preparing and mailing exit letter surveys to departing CPS workers • Recording and filing returned exit letter surveys • Administrative functions for processing out departing CPS workers • Reimbursable benefits provided to departing CPS workers 	<ul style="list-style-type: none"> • # staff exiting • time needed to send survey • data entry time • pay rate for admin. asst. • rate of benefits, method to reimburse
<i>Replacement</i>	<ul style="list-style-type: none"> • Initial communication concerning CPS openings • Advertising CPS openings in the internal agency publication • Maintaining job hotline/Internet position vacancy listings • Advertising CPS openings in newspapers • Prescreening potential CPS candidates for minimum qualifications • Screening potential CPS candidates • Preparing for interviews with candidates • Conducting interviews • Conducting reference and background investigations of CPS candidates • Completing administrative functions for processing in newly hired CPS workers 	<ul style="list-style-type: none"> • time required to complete tasks • # openings advertised • # openings included • newspaper fees • # of applications received • staff pay rate • interview time • avg. travel time • average time to conduct checks • tasks involved in processing
<i>Training</i>	<ul style="list-style-type: none"> • Preparation and copying training literature • Trainer and trainee salaries for classroom training • Training support staff and actors • Equipment and facilities used in training • Trainer and trainee salaries for field training • Reimbursements made to trainees • Portion of salaries of mentors 	<ul style="list-style-type: none"> • # pgs material • # trainer hours, pay rate • pay rate, fees • amortized cost of equipment • trainee pay rate • travel expenses • pay rates, time with trainees

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amount of time spent to complete each task. They were also asked to provide a high and low time estimate. This approach was used to account for variations in the process. Establishing high and low estimates enables one to calculate a range within which the true cost would reasonably lie.

Before data gathering can begin, a target year for the calculations must be established. Selecting a target year upon which to base the calculations can be a challenge. For example, although administrators may wish to have the calculations conducted for the most recently completed year, unique events or anomalies in the data for that year may exist that would lead to erroneous conclusions. In the case of the agency for which this project was conducted, the analyses were conducted in 1997 using 1995 as the target year. This particular year was selected after a determination by the agency's administrators that the conditions existing in 1995, rather than 1996, represented the more "typical" hiring and training processes. In fact, it may be advisable to select several years for analysis to establish the most reliable baseline for comparison with the results of future years' analyses.

Calculation Examples

Some components, such as the cost of training materials distributed to trainees, can be readily computed, and may already be regularly tracked. For example, deriving the total cost for training materials for the target year might involve determining the total number of pages of materials distributed to trainees (e.g., 500 pages), multiplying this by the total number of new trainees (e.g., 100) and the current photocopying cost (e.g., \$.05 per page), and adding binder costs (e.g., 100 binders x \$1.50 each). Specific formulas for some of the more involved calculations used in the current case are provided in table 2. It should be noted that these formulae will require review and modifications to tailor the cost elements to the unique activities that occur within each specific

TABLE 2
Formulas Used in Costing CPS Turnover

Separation Cost Formulas

- Mailing of Exit Letters $\text{Material Cost} \times \text{No. of Letters} + (\text{Time to Prepare Letters} \times \text{Personnel Pay Rate} \times \text{No. of Letters})$
- Receiving Exit Letters $\text{Data Entry Time} \times \text{Pay Rate} + (\text{Admin. Asst. Time} \times \text{Pay Rate}) \times \text{No. of Returned Letters}$
- Admin. Functions $\text{Personnel Assistant Time} \times \text{Pay Rate} \times \text{No. of Exits}$

Replacement Cost Formulas

- Notification of Opening $\text{Time to Notify Human Resources} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Exits}$
- Cost of Internal Agency Posting $\text{Time to Prepare} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Publications/Year} + \text{Copy Post} + \text{Postage}$
- Cost of Job Hotline/ Internet Posting $\text{Time to Update} \times \text{Pay Rate of Involved Personnel} \times \text{No. of CPS Postings in Target Year}$
- Cost of Newspaper Ads $\text{Time to Place Ads} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Ads Placed} + \text{Cost of Ads Placed for Year}$
- Prescreening Applicants for Min. Qualifications $\text{Time to Screen} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Screened} + \text{Postage for Screening Materials}$
- Reviewing/Screening of Applicants $\text{Time to Screen} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Applications Screened}$
- Interviewing Applicants $\text{Time to Interview} \times \text{Pay Rate of Involved Personnel} \times \text{No. of Interviews Conducted}$
- Post-Hire Admin. Func. $\text{Time to Conduct Admin Tasks} \times \text{Pay Rate of Involved Personnel} \times \text{No. of CPS Hires}$

Training Cost Formulas

- Cost of Trainers $\text{Trainer's Annual Salary} \times \text{Prep Time for Units Taught} + \text{Training Contact Hours}$
- Trainee Salary $\text{No. of Classroom Hours} \times \text{Trainee's Pay Rate} \times \text{No. of Trainees}$
- Additional Training Costs $\text{Admin. Staff Time} \times \text{Pay Rate of Involved Personnel} + \text{Cost of Additional Support Staff/actors} + \text{Cost of Equipment and Maintenance} + \text{Reimbursements Made to Trainees} + \text{Facilities Rental Costs}$
- Field Training Costs $\text{No. of Hours in Field Training} \times \text{Trainee's Pay Rate} \times \text{No. of Trainees Involved} + \text{Field Mentor's Time per Trainee} \times \text{Rate of Pay} \times \text{No. of Trainees Involved}$

agency. The calculations, however, are straightforward and require only simple mathematics, once the necessary data have been obtained. As an illustrative example, the process used to generate the cost estimates for one component is briefly reviewed here.

One component of the separation process in the agency studied was the activities conducted to remove a departing employee from the active personnel files. In the target year, staff in the human resources division were required to complete a checklist of specific outprocessing procedures. Interviews and observations with personnel assistants responsible for these activities revealed that the average amount of time needed to perform the steps required to complete this process for one employee was 60 minutes. This process could, however, require as much as 135 minutes or as little as 45 minutes, depending on how quickly the needed material and information was obtained. Multiplying the specific pay rate for the personnel performing these activities by their time estimates and by the total number of exits for the target year (i.e., the number of times they had to perform this process for CPS positions), the cost range for this administrative function was calculated to be between \$237 (using the low time estimate of 45 minutes) and \$711 (using the high time estimate of 135 minutes), with an average cost estimate of \$474.

Similarly, using readily available data and the relevant formulas from table 2 (adapted to the particular agency processes), the total cost of turnover for one year can be calculated, as well as the costs associated with each component of the administrative and training processes, and a per-vacancy average cost.

Costs Due to Performance Differential

One final cost element that significantly contributes to an organization's total turnover cost is the differential due to a reduction in performance levels that occurs whenever an experienced, productive employee is replaced with a new, inexperienced

hire. Assuming the experienced employee performed at a level somewhere above that of a new hire, a vacated position creates a deficit in performance for some period of time until the new employee develops the previous worker's level of expertise. Of course, departing employees may be performing poorly, in which case a newly trained, energized replacement may in fact represent a net performance improvement. In either case, there is a financial impact on the agency that can be estimated.

Translating these performance differences into dollar units has been one of the most problematic aspects of utility analysis (see Cascio [1991] for a review of these issues). A conservative measure that has been utilized successfully is a comparison of the rates of pay for experienced and newly hired CPS employees. The use of this method is based upon a critical assumption—that the employee's level of performance is in direct proportion to his or her level of compensation. To the degree that this assumption is met, a more experienced worker will in general exhibit higher performance than a less experienced worker, and his or her corresponding salary levels should reflect this performance difference. In many organizations, however, salary levels correspond more closely to length of tenure in a position than to levels of performance. Therefore, although the cost associated with this performance differential can be a substantial expense associated with turnover, its measurement in this context by way of salary comparisons may be tenuous. In the current case example, the cost due to performance differentials was calculated and would have increased the total turnover cost estimate by nearly 60%, were it included. In this study, the cost estimate of performance differentials was kept separate from the total turnover cost estimates. Whenever this is the case, the total cost figures should be referred to as *conservative estimates* to reflect the fact that performance differentials are not included.

The process for calculating these performance differentials is straightforward. First, one must calculate the midpoint of the pay

grade for the CPS position. This data is readily available from the agency's payroll database. Once the salary midpoint is determined, the next step is to calculate "compa-ratios" for replacement CPS workers and those leaving the position. The compa-ratio is simply the individuals' salary expressed as a percentage of the midpoint of the pay grade. For example, if the salary midpoint is approximately \$28,000 per year, and all new hires are paid the same rate of \$21,500 during training, then the compa-ratio for all replacement CPS workers will be .76 ($21,500/28,000$). A compa-ratio would be calculated for each CPS worker who left the position based upon his or her salary at the time of departure (departing salary divided by salary scale midpoint). Once the compa-ratios are calculated, the difference between the compa-ratio for each departing employee and his or her replacement is calculated. This difference is then multiplied by the pay scale midpoint to determine the estimated difference in performance between the departing employee and the replacement employee in dollar terms. These values are then summed to determine the total cost due to performance differential for the year. When the performance levels of departing employees are generally higher than those of new replacements, this total cost estimate will be a positive number. Obviously, if all departing employees were performing at levels lower than those of their replacements (and their salaries accurately reflected these lower levels of performance), the cost estimate for performance differentials would be negative and thus subtracted from the total turnover costs.

Prior to adding the cost estimate for performance differential to the total turnover cost estimate, it would be worthwhile to attempt to validate the assumption that rate of pay equates with employee performance levels. Of course, the absence of valid, reliable performance evaluation data for these employees precludes the possibility of conducting such a validation study and would indicate a need to exclude performance differential costs from overall turnover cost estimates.

Practical Considerations in Costing CPS Turnover

A number of practical decisions must be made when conducting this type of analysis. Table 3 outlines some of the decision points that were encountered in the present case example. Unfortunately, few guidelines exist for resolving these issues, and the researcher is left to his or her own reason and good judgment. Documentation of how these issues were handled can aid in later defense of these decisions, and involvement of key stakeholders early on in the process is advisable.

Implications for Human Resources Strategy

Irrespective of the employee's reasons for leaving employment, the departure of a trained, productive CPS worker can be shown to have a measurable financial impact on the organization. The purpose of conducting such an analysis does not lie in simply measuring the relevant costs, however, but in using the data to inform the development of interventions and programs to manage the more controllable aspects of those costs [Cascio 1991]. Thus, the determination of the financial impact of turnover on the organization should logically lead to a discussion on the reasons for turnover and strategies for reducing the preventable incidents of staff turnover. The overall costs of yearly staff turnover can be used as a standard against which administrators can evaluate the reduction in costs produced by the intervention.

In the case of the agency in question, the *per vacancy* average cost of CPS turnover was conservatively estimated to be \$10,000 (in 1995 dollars). This figure was compelling and led to much discussion regarding the reasons for this turnover and what might be done proactively to reduce it. Additional research, beyond the scope of this article, was initiated to explore the personal characteristics, motivations, and performance levels that related to staff retention [Graef & Van Horn 2000]. Analyses of exit survey data



TABLE 3
Practical Considerations in Costing CPS Turnover

<i>Issue</i>	<i>Examples of Questions to be Answered</i>
Appropriate level of detail to include	What level of detail should be included in costing a process? (e.g., should it include the cost of coffee filters used to make coffee during training?)
Identifying the appropriate personnel	Who should be contacted for information? At what level in the organization? Should representatives from various geographical regions be included even if the process is the same statewide?
Understanding the process	What personnel are involved in the process? At what level of involvement? Is the process the same for everyone, at every geographical location?
Averaging costs vs. determining exact costs	Trade-offs associated with averaging cost and time estimates. Determining exact costs is desirable, yet not always possible. Using ranges to overcome shortcomings associated with averages?
Observing steps in the process	Not all of the work is observable (e.g., some occurs sporadically). People are poor at explaining exactly what they do. Some functions seem foolish to observe: Should staff estimates of time be used?
Defining turnover	Should all vacancies created in the position be included? Exclude internal transfers? Focus only on voluntary turnovers and terminations?
Defining salary	Should only wages be used? Wages and benefits? What about other income (e.g., bonuses, reimbursements for mileage, meals and travel)?
Costs associated with facilities	Defining the space that the work takes place in is sometimes difficult (e.g., estimating square footage used for training, overhead costs, proportion of time equipment is used for training, etc.).
Processes that change over time	Difficult to estimate costs when the process changes during the target year (e.g., facilities for training change mid-year, different personnel assume specific tasks involved in the process, procedures change).
Availability/accuracy of data	Agency database may not have information in the form needed (e.g., data grouped by job classification but not by specific position), databases may not agree.

suggested that although some staff exited for unavoidable reasons (e.g., spouse relocation), many CPS staff in this agency departed because of a poor fit between their individual needs and the demands of the job. A variety of potential strategies can be used to reduce turnover (e.g., McEvoy & Cascio [1985]), and after much consideration, agency management identified several innovative approaches for improving the person-job fit, focusing on the recruitment and selection of new CPS workers.

Cascio [1991] argues that for newcomers, one reason for turnover centers around an individual's inflated expectations about the job and organization. Once these initial expectations are not met, employees become disenchanted and lose interest in the job. Obviously, this form of turnover is controllable by accurately depicting the job and organization to all newcomers. One method of accomplishing this is by providing a "realistic job preview" or RJP [Wanous 1992].

Briefly, an RJP is a process by which potential employees (ideally, prior to completing an application or job interview) are provided with accurate information (both positive and negative) concerning the type of work the person will be expected to perform, the type of organizational environment in which the person will work, the level of supervision the person will experience, etc. The intent is to clearly depict both the benefits and potential drawbacks of working in the job. Although the purpose of the RJP is not to scare potential employees away, it should provide enough information to all candidates so that they can make an informed decision concerning their employment.

In the present agency's example, it was noted that many new hires were unclear about the true nature of the job and would express surprise and dismay during preservice training when they realized what they would and would not be doing as CPS workers. One direct outgrowth of the turnover costing project was the development of a 25-minute video-based RJP, which all CPS applicants are now required to view prior to interviewing for a job

opening. The video's total production cost was less than the cost of one CPS vacancy, and was viewed as an excellent investment that would pay for itself if it prevented at least one ill-informed applicant from being hired and then quitting prematurely.

Another method by which the high costs of turnover can be reduced is through the use of sophisticated screening measures to be used at the early stages of the selection process. Typically this process can be accomplished through the assistance of industrial or organizational psychologists or other individuals with expertise in the area of personnel selection. By developing personnel selection measures (e.g., job sample tests, knowledge tests, structured situational interviews, personality measures, etc.) that are directly tied to the knowledge, skills, and abilities needed for successful job performance, the organization increases its ability to identify highly qualified candidates with the lowest probability of turnover. Once again, by using utility analysis methods similar to those described in this paper, the cost-effectiveness of these improved selection methods can be quantified [Cascio 1991; Schmidt et al. 1979] and the cost savings brought about by reduced turnover can be evaluated. In the researchers' partnership with the agency, a variety of innovative CPS selection measures are being developed, and the results of the turnover costing project described here will play heavily in the evaluation of the financial impact of these changes in selection procedures.

The two methods discussed above represent only some of the many ways by which turnover can be managed. What these two techniques share in common is the focus they place on early intervention. Both of these methods deal with potential turnover upfront, before actual hiring has occurred or before any training dollars have been spent. One need only look to the total dollar figures that result from analyses such as those presented here to quickly realize that CPS employees represent a significant investment of time and money. Therefore, it is imperative that steps be taken to ensure that each dollar that is invested provides for the

highest level of return. One way to ensure that this happens is for administrators to take the time to fully understand their level of investment in new staff through processes such as those described here, and then use these data to inform and evaluate new and existing human resource strategies. ♦

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