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Performance-based contracting and the moderating influence of caseworker role overload on service provision in child welfare

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Abstract

Although performance-based contracts have become increasingly popular in child welfare, administrators are developing these contracts with little empirically guided information about how internal work conditions may influence the services families receive. This study examines how child welfare caseworker role overload moderates associations between child welfare agencies' use of performance-based contracting and services provided to families. Analyses using data from the National Survey of Child and Adolescent Well-Being suggest that when caseworkers experience high role overload, use of performance-based contracts may decrease caregivers' likelihood of receiving necessary social and behavioral health services. These findings and their implications are discussed.

Keywords

child welfare; performance-based contracting; role overload; service disparities

Introduction

Since the late 1990s, state and local governments have reconfigured how child welfare services are delivered in response to rising numbers of children in foster care, concern over the costs of child welfare service provision, and pressure to meet federal performance standards under the Child and Family Service Review (CFSR) process established under the Adoption and Safe Families Act (ASFA) (Childrens Bureau, 2005; Gao, 1997; Yilmaz, Hoo, Nagowski, Rueben, & Tannenwald, 2007). Public efforts at reform have largely involved privatizing services under the assumption that private child welfare agencies will more efficiently and effectively serve families than public bureaucracies (Van Slyke, 2003;

Wright & Radel, 2007). Restructuring has also involved manipulating the payment structures associated with government contracts so that contractors share some of the financial risks, or cost uncertainties of child welfare service provision (C McCullough & Lee, 2007). As a result, performance-based contracts, which provide contracted agencies with financial incentives and/or sanctions to achieve selected outcomes, have become particularly popular in child welfare (C McCullough & Schmitt, 2003; Wulczyn, 2000).

Performance-based assessments in child welfare have generally been limited to the most easily measured outcome, permanency or the placement of youth into a stable residence (Blackstone, Buck, & Hakim, 2004; Kearney & McEwen, 2007; C. McCullough, 2004; C McCullough & Lee, 2007; Unruh & Hodgkin, 2004). Almost all current performance-based contracts within child welfare focus on facilitating faster permanency by providing financial incentives (either through rewards and/or sanctions) for contractors to move children quickly out of foster care and into a permanent setting, whether through parent-child reunification, kinship foster care, or adoption.

However, because child welfare services do not meet many of the conditions believed necessary for optimal use of performance-based contracting, these contracts may have unanticipated consequences (Eisenhardt, 1989; Stroh, Brett, Baumann, & Reilly, 1996). For example, child welfare outcomes such as safety and well-being are difficult to measure (Tilbury, 2004). Child welfare activities also frequently involve joint or team efforts, making it difficult to assign responsibility for outcomes to one individual or agency. Moreover, factors in the external environment contribute heavily to variation in child welfare agency performance such as challenges related to inter-organizational collaboration or limited provider availability (Child Welfare League of America, 1989; Van Slyke, 2003; Wells & Johnson, 2001). In high-risk environments, shifting financial risk to contractors may not be optimal because it provides incentives for child welfare contractors to reduce their own risk exposure, regardless of whether their actions have a detrimental effect on desired performance outcomes in the long term (Bloom & Milkovich, 1998). This problem may be magnified in the organizations with which child welfare agencies frequently contract, which already tend to not have many “slack,” or excess, resources to protect themselves from financial uncertainty (C. McCullough, 2004; Van Slyke, 2003). Financial risk may therefore push these organizations into implementing strategies for conserving and rationing limited resources, such as understaffing, that make it very difficult for workers to employ best practices (Lipsky, 1980; Prottas, 1979).

To some extent, child welfare administrators have tried to compensate for the vulnerability of the agencies with which they contract by including risk-mitigating strategies in their performance-based contracts. For example, performance-based contracts may include catastrophic stop-loss provisions or risk-pools. However, such provisions do not address the underlying issue, which is that performance-based contracts focused exclusively on permanency may not provide caseworkers with incentives to follow through on aspects of case management other than those directly related to time to permanent placement. For example, even though caseworkers’ training curricula emphasizes a family-oriented approach, evidence suggests that caseworkers often find working with permanent caregivers time-consuming (Smith & Donovan, 2003). Meeting permanent caregivers’ needs often requires provision of multiple services, including mental health, substance abuse, and social services such as housing or legal aid (Choi & Ryan, 2007; Cleaver, Unell, & Aldgate, 2000; Jones, 1998). While such services can result in improved outcomes for caregivers and their children (DePanfilis & Zuravin, 2002; Marsh, Ryan, Choi, & Testa, 2006), the time involved in caregiver service provision can be problematic for caseworkers because timelines for provision of mental health and substance abuse treatment often conflict with preferred child welfare timelines for establishing permanency (Drabble, 2007; Young & Gardner, 2002).

Consequently, pressure to meet permanency deadlines can cause caseworkers to de-prioritize this work (McBeath & Meezan, 2010; Smith & Donovan, 2003). Performance-based contracts that emphasize speed of child permanency placements and direct caseworker efforts towards that goal may further encourage overworked caseworkers to de-prioritize permanent caregiver engagement and service receipt.

There is currently relatively little empirical evidence as to how performance-based contracting within child welfare influences child welfare outcomes other than permanence. However, the few existing studies, all of which have occurred in county- or state-specific settings, suggest that while financial incentives positively influence contractors to more swiftly establish permanency, they may also promote these goals at the expense of other outcomes (McBeath & Meezan, 2008; Meezan & McBeath, 2008). In particular, findings indicated that factors within the contracting agencies may moderate the influence of performance-based contracting on child welfare agency outcomes. For example, research on a performance-based initiative in a Michigan county found that relative to children in agencies reimbursed through fee-for-service contracts, children served by agencies with performance-based contracts received fewer non-therapeutic services such as case management or social services, and were less likely to be reunified with their families (McBeath & Meezan, 2008; Meezan & McBeath, 2008). Reunifying children with their families required greater service efforts on the part of caseworkers than other permanency outcomes, such as adoption or kinship care; therefore it was speculated that child welfare agencies' response to performance environments affected client outcomes partially through the services provided by caseworkers (McBeath & Meezan, 2010).

Currently, child welfare agencies in over half of states in the U.S. have experimented with some form of performance-based contracting, and more plan to do so in the future (Blackstone, et al., 2004; Kearney & McEwen, 2007; Unruh & Hodgkin, 2004). Research in other social service sectors has shown that the effect of performance-based contracting on desired outcomes is influenced by the working conditions of the people charged with providing services under these contracts (Bloom & Milkovich, 1998; Eisenhardt, 1989; Stroh, et al., 1996). However, most child welfare agencies are developing performance-based contracts within child welfare with very little empirically guided information about how these conditions may influence desired outcomes.

There is a growing awareness within child welfare of how factors within the internal agency environment – such as caseload, supervisor support, and peer support – influence caseworker practices and client outcomes (Glisson & Green, 2006; Glisson & Hemmelgarn, 1998; J. Yoo, 2002; J Yoo & Brooks, 2005). However, there is still a lot to learn about how these conditions moderate the relationship between use of performance-based contracts and desired child welfare outcomes.

This study contributes to the literature by using data from a national survey of children and families involved with the child welfare system to examine associations between use of performance-based contracting, the internal child welfare agency environment, and service outcomes in child welfare. Specifically, we hypothesize that caseworker role overload, or having too many demands given the time available to satisfy them (Coverman, 1989; Harrison, 1980; Hecht, 2001; Malm, 2001), negatively moderates the relationship between performance-based contracting and service provision. Services such as case management, in-home services, and permanent caregiver receipt of necessary behavioral health and social services were selected to determine whether families' multidimensional needs were being met, and also because of their association with child welfare outcomes such as parent-child reunification (Gao, 2004; McCarthy, Van Buren, & Irvine, 2007; Miller, Fisher, Fetrow, & Jordan, 2006)

Methods

Data source

Data were drawn from the Child Protective Services (CPS) cohort of the National Survey of Child and Adolescent Well-Being (NSCAW), the only national study of children in the U.S. child welfare system (Dowd et al., 2004). NSCAW was funded by the Administration for Children and Families within the U.S. Department of Health and Human Services and was carried out by Research Triangle Institute (RTI) International. A two-stage stratified design was used to sample children in 92 primary sampling units within 46 states throughout the U.S. Assessments of child and family context and well-being were conducted through interviews with each child, the current caregiver, and the child welfare caseworker at baseline (Wave 1, with first interviews conducted between October 1999 and December 2000), at 12 months (Wave 2), at 18 months (Wave 3), and at 36 months (Wave 4) after the close of the investigation or assessment. Although a fifth wave was collected at 48 months, these data were omitted from the current analyses due to the high attrition rate once youth reached 18 years of age.

Weighted data were used in the current analyses. Participation was adjusted by the probability of selecting the child's county of residence and then the probability of selecting the child given that the child's county of residence was sampled (Dowd, et al., 2004). When incorporated in analyses, these weights yield approximately design-unbiased and consistent estimates for the corresponding population quantities (Christ, Biemer, & Wiesen, 2007; Pfefferman, Skinner, Holmes, Goldstein, & Rasbash, 1998). The result is an almost nationally representative sample of children who have had encounters with the child welfare system, excluding only four states whose human subjects' requirements exceeded the resources of the NSCAW study to accommodate.

Child welfare agency directors were interviewed in Wave 1 about agency use of performance-based measures linked with financial incentives and/or sanctions. Child welfare caseworkers were interviewed about role overload in Wave 2. Additional contextual data were merged with the NSCAW data using county-level identifiers from the 2000 Area Resource File (ARF), the Child Welfare League of America National Data Analysis System (NDAS), the National Survey of Substance Abuse Treatment Services (NSSATS), and from data on county-level mental health shortages (Thomas, Ellis, Konrad, Holzer, & Morrissey, 2009). Given the restricted nature of the NSCAW data, the merge was conducted by RTI International at our request.

Analytic samples

At baseline, the initial NSCAW sample included 1664 permanent caregivers whose families were assessed as requiring child welfare agency-funded services and who were served by child welfare agencies in which the agency director provided information about the agency's use of performance-based contracting. For 622 of these 1664 caregivers, the assigned services caseworker was interviewed about his or her work environment and the services provided to the index family. The final analytic sample for the three models predicting caseworker efforts spent on case management and in-home service provision, and permanent caregivers' receipt of social services was therefore 622 permanent caregivers and their services caseworkers nested within 54 county CPS agencies.

Models examining permanent caregivers' receipt of behavioral health services were further restricted to include only permanent caregivers who needed each type of service (mental health or substance abuse treatment). Application of this restriction reduced the sample for models predicting receipt of mental health services to 461 caregivers and the sample for

models predicting substance abuse treatment to 355 caregivers, each nested within 54 county CPS agencies.

Listwise deletion for item missingness in each model reduced the final analytic sample for models predicting caseworker hours and permanent caregivers' receipt of social services to between 515 and 557 permanent caregivers and caseworkers; the final analytic sample for the mental health model to 239 caregivers; and the final analytic sample for the substance abuse treatment model to 143 caregivers nested within 54 county CPS agencies. The majority of item missing was attributed to the caregiver health insurance variable, which was only available for 254 of 461 caregivers in the mental health model, and for 150 of 355 caregivers in the substance abuse treatment model.

Given that sampling weights within NSCAW incorporate survey non-response but not item non-response (Dowd, et al., 2004; Little, 1988), weighted t-tests were conducted on all model variables to determine if the data were missing at random or if a correction for sample selection bias would be required (Allison, 2002; Lee & Marsh, 2000). Results indicated that the cases in the final analytic sample for all models did not differ significantly from those excluded due to missing values for other variables; therefore, it was concluded that the missing data were ignorable.

Measures

Behavioral health service need—Caregivers' need for behavioral health services was based on each investigative caseworker's assessment of the caregiver's need for either mental health services or substance abuse treatment at baseline (Wave 1), as well as on whether the caregiver was assessed as being depressed or substance dependent (i.e. alcohol and/or drug dependent) using screening scales from the World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF) (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998; Walters, Kessler, Nelson, & Mroczek, 2002). The version of the CIDI-SF used in NSCAW provided depression diagnoses based on *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV* criteria (American Psychiatric Association, 1994), and substance-dependence diagnoses based on *Diagnostic and Statistical Manual of Mental Disorders: DSM-III-R* criteria (American Psychiatric Association, 1987). Psychometric research indicates good test-retest and inter-rater reliability and diagnostic validity of the CIDI long-form scale (Wittchen, 1994), as well as high concordance between diagnostic classifications obtained using CIDI-SF and the longer measure (Andrews & Peters, 1998; Rubio-Stipec, Peters, & Andrews, 1999).

Services received by children and families in child welfare—Five dependent variables were used to examine the services received by children and families in child welfare (Table 1). These variables were selected to reflect the child welfare agency's efforts to promote family well-being, and reflect both caseworker practices and the actual services received by permanent caregivers. These variables were: (1) the average number of hours per month the caseworker spent on case management and service referrals for the family; (2) the average number of hours of in-home services the family received each month; (3) the number of social services – such as legal aid, food from a community source, emergency shelter or housing, child care, and referrals for job-related services, organized support groups, or home management training – received by caregivers since entering the child welfare system (Waves 2–4); (4) whether the permanent caregiver received any mental health services since entering the child welfare system (Waves 2–4); and (5) whether the permanent caregiver received any substance abuse services since entering the child welfare system (Waves 2–4). Data on average caseworker hours were collected once, twelve months after families entered the child welfare system (Wave 2). Caregiver service receipt was

measured across multiple waves to account for the amount of time often required for caseworkers to facilitate families' access to necessary social and behavioral health services.

Permanent caregivers' receipt of mental health services was set equal to 1 if caregivers reported receiving outpatient counseling or therapy; day treatment or partial hospitalization; or family counseling; or if caseworkers indicated that permanent caregiver received mental health services as a result of referral by the child welfare agency. Permanent caregivers' receipt of substance abuse was also based on both permanent caregivers' and caseworkers' reports of whether any services were received. The rationale for including both permanent caregiver and caseworker responses was to account for the possibility that caregivers might under-report services and caseworkers might not be fully aware of the extent of caregiver service utilization.

Performance-based contracting and caseworker role overload—A 1/0 measure of the main effect of performance-based contracting was based on the child welfare agency director's report of whether the agency used performance-based measures linked to financial incentives or sanctions. This information was collected only once, at baseline (Wave 1). The main effect caseworker role overload was measured using a validated Likert scale ($\alpha = .82$) based on caseworker responses to eight perceptual items about the demands within their work environment (James & Sells, 1981; Rizzo, House, & Lirtzman, 1970). These questions were asked of the caseworkers providing services to families and were collected once, in Wave 2. Caseworkers were assessed to have high role overload if their value for role overload was at or above the sample mean; values lower than the mean were assessed as low role overload.

Given that the coefficients of interaction terms within nonlinear models do not accurately represent interaction effects (Ai & Norton, 2003; Norton, Wang, & Ai, 2004), we instead used two dichotomous variables to test how caseworker role overload moderated the association between performance-based contracting and each outcome. The first variable was set =1 if the child welfare agency used performance-based contracting and the caseworker reported high role overload. The second variable was set =1 if the child welfare agency used performance-based contracting and the caseworker reported low role overload. Inclusion of these two dichotomous variables tested for potentially differing effects of performance-based contracting given high and low caseworker role overload respectively, relative to situations where performance-based contracting was not used.

Other covariates—Two agency-level control variables were included to account for potential confounders of the associations between focal predictors and service provision. The first variable, drawn from 2000 Area Resource File, indicated whether the agency was located within a non-metropolitan statistical area, and served as a control for rural-urban differences in service provision and as a proxy for organizational size (Alexander, Nank, & Stivers, 1999; Johnston & Romzek, 1999). The second variable was a control for local behavioral health provider availability. This variable was operationalized differently depending on the model. For all models except the one involving permanent caregiver receipt of substance abuse treatment, this variable was operationalized as the percentage of unmet mental health needs within the county, including those for providers with and without prescription authority (Thomas, et al., 2009). For the model involving permanent caregiver receipt of substance abuse treatment, data from the 2000 National Survey of Substance Abuse Treatment Services on the total number of behavioral health care facilities in the county, which was collected by the U.S. Department of Health and Human Services Substance Abuse and Mental Health Administration (SAMHSA) were utilized as a measure of local provider availability. This variable was log-transformed for the analyses to accommodate anticipated diminishing returns to scale.

Certain baseline factors known to influence families' interactions with the child welfare system were also added as controls. These factors are type of maltreatment, child gender, child age, whether the child was identified as having special needs, caregiver's relationship with the child, caregiver race, caregiver insurance, whether the caregiver had a behavioral health problem, and whether the child welfare case had closed since the initial investigation. Child special needs was operationalized as whether the child had chronic health problems and/or a clinical score (65 or above) on either the internalizing or externalizing scales of the Child Behavior Checklist (CBCL), a standardized instrument for assessing the presence of behavioral health problems in children (Achenbach & Edelbrock, 1983). Caregivers were assessed as having a behavioral health problem if the investigative caseworker assessed the permanent caregiver as having either mental health or substance abuse problems at baseline or if the caregiver was assessed as being depressed or substance dependent (i.e. alcohol and/or drug dependent) using the CIDI-SF (Kessler, et al., 1998; Walters, et al., 2002). In the behavioral health models, which were restricted on this assessment of need, this variable was replaced by a measure of caregiver comorbidity, which indicated whether the caregiver had both mental health and substance abuse problems.

Analysis plan

NSCAW data have a hierarchical structure, with children, caregivers, and caseworkers nested within child welfare agencies. Consequently, we first used unconditional multilevel models (not shown) to examine the degree to which child welfare agency-level factors contributed to the total variance observed in each dependent variable. Results of the unconditional multilevel models indicated that for all of the count variables (caseworker time on case management and in-home service provision for families, and the number of supportive services received by permanent caregivers) there was not sufficient variance in outcomes ($ICC < 5\%$) due to agency-level factors to support the use of multilevel modeling. The remaining dependent variables were dichotomous, and while the ICC for these variables were $\geq 5\%$, the values were still relatively low (between 6–8%), suggesting that agency-level factors contributed only slightly to these service outcomes as well. In addition to the small amount of agency-level variance, the analytic sample contained a relatively modest number of level-2 units (54 child welfare agencies). With unbalanced data such as NSCAW, estimation of coefficients and standard errors in multilevel models rely on large-sample theory. Particularly with binary dependent variables, a small sample of level-2 units (< 100) can result in biased estimates premised on inaccurate assumptions about variable distributions (Raudenbush & Bryk, 2002). Given both the modest ICC and number of level-2 units, all models were analyzed as single-level models, adjusting for the potential clustering of caseworkers and permanent caregivers within child welfare agencies.

Analyses were conducted using the Stata 10.0 svy module (StataCorp, 2007). The svy module accounts for the complex survey design of the data, accommodating stratification, clustering of caregivers and their caseworkers within agencies, and probability weights. The link function used for each model reflected the nature of the dependent variable: negative binomial for the average hours per month the caseworker spent on case management and referrals or on in-home service provision, logistic for dichotomous variables such as caregiver receipt of mental health and substance abuse services, and Poisson for the number of supportive services received by permanent caregivers.

Two models were run for each dependent variable. In the first model, performance-based contracting and caseworker role overload were included as separate covariates in order to identify the main effects of these variables upon each type of service use. In the second model for each dependent variable, the main effects for performance-based contracting and role overload were replaced by two dichotomous predictors: (1) agency use of performance-based contracting when caseworkers reported high role overload and (2) agency use of

performance-based contracting when caseworkers reported low role overload. Using these combined measures revealed the different effects of performance-based contracting on service utilization given high vs. low caseworker role overload, relative to the absence of performance-based contracting. To allow for these relative comparisons, coefficient estimates for all models were transformed to either odds ratios (for logistic regression) or incidence rate ratios (for Poisson and negative binomial). These are expressed as the relative odds and relative frequency of occurrence, respectively, in the dependent variable given a one-unit change in the independent variable (Aschengrau & Seage, 2003).

Power calculations conducted using the Optimal Design software determined that in the models not restricted based on caregiver need for behavioral health services, there was sufficient power to detect a medium effect size (≥ 0.5) at a significance level (α) of 0.05 (Spybrook, Raudenbush, Liu, Congdon, & Martinez, 2008). For the models restricted based on caregiver need for behavioral health services, there was sufficient power to detect an effect size of 0.6 or higher. Finally, bivariate correlations among study variables, followed by tolerance checks for any correlations $> .4$, did not indicate any problematic collinearity.

This secondary data analysis was approved by the Institutional Review Board at the lead author's home institution. The original data collection was approved by an Institutional Review Board at RTI International.

Results

Table 1 provides descriptive statistics for all study measures. The mean time caseworkers reported spending on case management for a family each month was 5.26 hours and the mean time caseworkers spent each month on direct in-home service provision for a family was 7.74 hours. On average, permanent caregivers reported receiving only 1 out of 6 possible social services, with child care and referrals for job-related services (not shown) being the most common. Of the caregivers assessed as needing such services at baseline (461 of 622 for mental health; 355 of 622 for substance abuse treatment), approximately 46% had received some mental health services and approximately 48% received substance abuse treatment since entering the child welfare system.

Approximately 25% of permanent caregivers were served by child welfare agencies that used performance-based contracting; at the agency level, 16 of the 54 (30%) child welfare agencies used performance-based contracting and the remainder did not. The mean level of role overload reported by caseworkers within the sample was 3.79 on a 1–5 scale. On average, 16% of families received services from child welfare agencies that used performance-based contracting and from a caseworker with high role overload; approximately 9% of families were served by child welfare agencies that used performance-based contracting and had a service caseworker with low role overload.

Tables 2–4 provide model results for caseworker hours spent in service provision, the number of supportive services received by permanent caregivers, and caregivers' likelihood of receiving behavioral health services. The first model for each dependent variable shows the main effects of performance-based contracting and caseworker role overload, respectively. The second model for each dependent variable shows the effects of performance-based contracting under conditions of high versus low caseworker role overload. Use of performance-based contracting was negatively associated with average caseworker hours spent on in-home service provision (IRR 0.58, $p < 0.01$) and with odds of mental health service receipt (OR=0.29, $p < 0.05$), holding caseworker role overload constant. Similarly, caseworkers with higher role overload reported spending less time on case

management and referrals for caregivers, although the association was not significant at $\alpha=0.05$ (IRR=0.75, $p<0.10$).

The pattern of results becomes stronger when performance-based contracting is combined with caseworker role overload. The combination of performance-based contracting and caseworker high role overload decreased caseworker hours spent on case management and service referrals by a factor of 0.65, or by -35% ($p<0.05$) and the number of supportive services received by caregivers by a factor of 0.62, or by -38% ($p<0.01$). Similarly, the negative association between use of performance-based contracting and caseworker hours on in-home service provision was stronger when the caseworker reported high role overload (IRR 0.49, $p<0.01$) than when the caseworker reported low role overload (IRR 0.69, $p<0.05$).

In contrast, the combination of performance-based contracting and low role overload increased caseworkers' hours spent in case management and service referrals by a factor of 1.43, or 43.1% ($p<0.05$). This result represented the only significant positive association between performance-based contracting and service outcomes.

Discussion

This study investigated whether caseworker role overload moderated the relationship between performance-based contracting and service provision to families involved with child welfare agencies. This issue is important because currently, almost all performance-based contracts within child welfare focus on permanency, or the placement of children and youth into stable residences. However, contracts linked only to this outcome may cause caseworkers to pursue swift permanency placements by providing less intensive case management and/or pursuing permanency options that require less engagement with permanent caregivers. Evidence in the literature suggests that caseworkers perceive parent-child reunification as particularly time-consuming because it requires them to provide more services than other permanency options (McBeath & Meezan, 2010). Particularly when faced with pressure to quickly achieve permanency for a larger number of cases, caseworkers may choose to focus on other permanency options instead. For example, despite evidence that children placed with relatives take longer to reunify with parents, are less likely to be adopted, and receive fewer services and financial support than children placed with non-related caregivers (Cuddeback, 2004; McBeath & Meezan, 2010), kinship foster care has become an increasingly common placement option.

The current study findings were largely consistent with this logic: use of performance-based contracting in and of itself was associated with significantly fewer caseworker hours spent on in-home service provision to families, as well as significantly lower odds of caregivers receiving needed mental health services. Both of these outcomes require caseworkers to spend a significant amount of time working with permanent caregivers; as suggested by the negative associations with these outcomes, child welfare agencies' use of performance-based contracting may cause caseworkers to de-prioritize such efforts.

Study findings also indicate that the consequences of performance-based contracting may depend on agency-level factors in ways that policymakers may not currently be taking into consideration. In this study, the combination of performance-based contracting and high caseworker role overload was associated with significantly fewer caseworker hours spent on case management. Under these conditions, caregivers also received fewer social services; while not statistically significant at the 5% level, results from the behavioral health models indicate that caregivers had lower odds of receiving substance abuse treatment as well. These findings suggest that when designing performance-based contracts, child welfare

agencies should consider the potential effect of internal work conditions on the effectiveness of such contracts. Many caseworkers operate under severe time pressures and resource constraints, and may already seek ways to make their work more efficient by focusing primarily on outcomes for which they are held accountable (Jayaratne & Chess, 1984; Smith & Donovan, 2003). In situations in which caseworkers are overburdened, the use of performance-based contracts may provide incentives for them to focus their efforts on certain outcomes to the detriment of others. While the current study could not determine whether caseworkers experienced high role overload prior to the implementation of performance-based contracting, study findings suggest that the combination of the two is negatively associated with certain outcomes and should be monitored closely.

Policymakers and managers could help address this issue by re-structuring performance-based contracts to ensure that caseworkers are not focusing on permanence at the expense of other important means of supporting child well-being. More explicit emphasis on case management processes or on a broader range of outcomes might not address the ongoing issue of caseworker role overload, but could help reduce the risk that over-burdened staff will focus their efforts too narrowly. Including extra incentives for achievement of long-term placement stability rather than simply rewarding swift permanency placements could also be helpful.

Investment in supervisory training that emphasizes the importance of ensuring service provision to both biological parents and children could also help balance caseworker priorities. Evidence suggests that caseworkers do not transfer skills learned in training— e.g. taking a family--oriented approach—to the workplace when the work environment does not nurture such skills (Gregoire, Propp, & Poertner, 1998). Child welfare agency managers, and particularly frontline supervisors, play an important role in shaping caseworker priorities and practices (Gregoire, et al., 1998; Landsman, 2001; McBeath, Briggs, & Aisenberg, 2009; Smith, 2005). Supervisors trained to support their caseworkers in taking a more holistic approach could help mitigate the effects of role overload on caseworker practices.

Another possibility might be to adjust performance-based contracts to account for organizations' different work environments and/or service capacities. For example, administrators could design contracts that take into account child welfare agency caseloads and staffing ratios, or that adjust the expected timeframe for permanency placements based on the availability of local health and human services. Certainly the positive association between use of performance-based contracting and case management practices in our study when the caseworker reported low role overload suggest that performance-based contracting may accomplish desired results when these variables are accounted for.

One challenge in interpreting results derives from the lack of granularity of the measure of agencies' use of performance-based contracting. Child welfare agency directors were asked only whether their agency used these mechanisms; additional details about contract design were not available. Therefore, we did not know whether provision of permanent caregiver services was also included in the contract, or the size of the fiscal incentive or sanction provided. In addition, the nature of performance-based contracting may have changed since these data were collected. Given the growing use of such contracts within the U.S. child welfare system (e.g. Join Hands for Children, 2009), it will be important for future research to continue examining how different types of performance-based contracts affect outcomes under varying agency and contextual conditions.

Despite these limitations, our study is the first to examine associations between use of performance-based contracting, role overload – a key factor in the internal agency environment – and service outcomes in child welfare. Our findings indicate that caseworker

role overload may moderate associations between child welfare agencies' use of performance-based contracting and service outcomes for families. While there is a need for additional research in this area, policymakers and child welfare agency administrators may wish to consider modifying existing contracts to emphasize case management processes and family well-being outcomes, or at least to take into account current child welfare agency caseloads and staffing ratios.

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References

- Achenbach, T.; Edelbrock, C. Manual for the child behavior checklist and revised child behavior profile. Burlington: University of Vermont, Department of Psychiatry; 1983.
- Ai C, Norton E. Interaction terms in logit and probit models. *Economics Letters*. 2003; 80:123–129.
- Alexander J, Nank R, Stivers C. Implications of welfare reform: Do nonprofit survival strategies threaten civil society? *Nonprofit and Voluntary Sector Quarterly*. 1999; 28(4):452.
- Allison, P. Missing data. Thousand Oaks, CA: Sage Publications; 2002.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-III-R. 3. Washington, DC: American Psychiatric Association; 1987.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-IV. 4. Washington, DC: American Psychiatric Association; 1994.
- Andrews G, Peters L. The psychometric properties of the Composite International Diagnostic Interview. *Social Psychiatry and Psychiatric Epidemiology*. 1998; 33(2):80–88. [PubMed: 9503991]
- Aschengrau, A.; Seage, GR. Essentials of epidemiology in public health. Sudbury, MA: Jones and Bartlett Publishers; 2003.
- Blackstone E, Buck A, Hakim S. Privatizing adoption and foster care: Applying auction and market solutions. *Children and Youth Services Review*. 2004; 26(11):1033–1049.
- Bloom M, Milkovich G. Relationships among risk, incentive pay, and organizational performance. *Academy of Management Journal*. 1998:283–297.
- Child Welfare League of America. Child Welfare League of America standards for service for abused or neglected children and their families. Washington, DC: Child Welfare League of America; 1989.
- Childrens Bureau. Child Welfare Outcomes 2002–2005: Report to Congress. Washington DC: U.S. Department of Health and Human Services, Administration for Children and Families; 2005.
- Choi S, Ryan J. Co-occurring problems for substance abusing mothers in child welfare: Matching services to improve reunification. *Children and Youth Services Review*. 2007; 29(11):1395–1410.
- Christ, S.; Biemer, P.; Wiesen, C. Guidelines for applying multilevel modeling to the NSCAW data. Ithaca, NY: National Data Archive on Child Abuse and Neglect; 2007.
- Cleaver, H.; Unell, I.; Aldgate, J. Children's needs and parenting capacity: The impact of parental mental illness, problem alcohol and drug use, and domestic violence on children's development. London: The Stationery Office; 2000.
- Coverman S. Role overload, role conflict, and stress: Addressing consequences of multiple role demands. *Social Forces*. 1989:965–982.
- Cuddeback G. Kinship family foster care: A methodological and substantive synthesis of research. *Children and Youth Services Review*. 2004; 26(7):623–639.
- DePanfilis D, Zuravin S. The effect of services on the recurrence of child maltreatment. *Child abuse & neglect*. 2002; 26(2):187–205. [PubMed: 11933989]
- Dowd, K.; Kinsey, S.; Wheelless, S.; Thissen, R.; Richardson, J.; Suresh, R., et al. Data file users manual general release version. Ithaca, New York: National Data Archive on Child Abuse and Neglect; 2004. National Survey of Child and Adolescent Well-being (NSCAW) Combined waves 1–4.

- Drabble L. Pathways to collaboration: Exploring values and collaborative practices between child welfare and substance abuse treatment fields. *Child Maltreatment*. 2007; 12:31–42. [PubMed: 17218646]
- Eisenhardt K. Agency theory: An assessment and review. *Academy of management review*. 1989:57–74.
- Gao. Social service privatization: Expansion poses challenges in ensuring accountability for program results. (GAO/HEHS-98–6). Washington DC: United States Government Accountability Office; 1997.
- Gao. Child and family services reviews: States and HHS face challenges in assessing and improving state performance. (GAO-04-781T). Washington, DC: United States Government Accountability Office; 2004.
- Glisson C, Green P. The effects of organizational culture and climate on the access to mental health care in child welfare and juvenile justice systems. *Administration and Policy in Mental Health and Mental Health Services Research*. 2006; 33(4):433–448. [PubMed: 16240076]
- Glisson C, Hemmelgarn A. The effects of organizational climate and interorganizational coordination on the quality and outcomes of children's service systems. *Child abuse & neglect*. 1998; 22(5): 401–421. [PubMed: 9631252]
- Gregoire T, Propp J, Poertner J. The supervisor's role in the transfer of training. *Administration in Social Work*. 1998; 22(1):1–18.
- Harrison W. Role strain and burnout in child protective service workers. *Social Service Review*. 1980; 54(1):31–44. [PubMed: 10246484]
- Hecht L. Role conflict and role overload: Different concepts, different consequences. *Sociological Inquiry*. 2001; 71(1):111–121.
- James L, Sells S. Psychological climate: Theoretical perspectives and empirical research. Toward a psychology of situations: An interactional perspective. 1981:275–295.
- Jayarathne S, Chess W. Job satisfaction, burnout, and turnover: A national study. *Social Work*. 1984; 29(5):448–453. [PubMed: 10268448]
- Johnston J, Romzek B. Contracting and accountability in state Medicaid reform: Rhetoric, theories, and reality. *Public Administration Review*. 1999; 59(5):383–399.
- Join Hands for Children. Washington state legislature 2SHB 2106: Child welfare transformation design committee, second quarterly report. Washington State; 2009.
- Jones L. The social and family correlates of successful reunification of children in foster care. *Children and Youth Services Review*. 1998; 20(4):305–323.
- Kearney K, McEwen E. Striving for excellence: Extending child welfare performance-based contracting to residential, independent, and transitional living programs in Illinois. *Professional Development: International Journal of Continuing Social Work Education*. 2007; 10(3):32–48.
- Kessler R, Andrews G, Mroczek D, Ustun B, Wittchen H. The World Health Organization Composite International Diagnostic Interview short-form (CIDI-SF). *International Journal of Methods in Psychiatric Research*. 1998; 7(4):171–185.
- Landsman M. Commitment in public child welfare. *Social Service Review*. 2001; 75(3):386–419.
- Lee B, Marsh L. Sample selection bias correction for missing response observations. *Oxford Bulletin of Economics and Statistics*. 2000; 62(2):305–322.
- Lipsky, M. *Street Level Bureaucracy: Dilemmas of the Individual in Public Services*. New York: Russell Sage Foundation Publications; 1980.
- Little R. Missing-data adjustments in large surveys. *Journal of Business and Economic Statistics*. 1988; 6(3):287–301.
- Malm, K. Occasional Paper 54. Washington DC: Urban Institute; 2001. Running to keep in place: The continuing evolution of our nation's child welfare system.
- Marsh J, Ryan J, Choi S, Testa M. Integrated services for families with multiple problems: Obstacles to family reunification. *Children and Youth Services Review*. 2006; 28(9):1074–1087.
- McBeath B, Briggs H, Aisenberg E. The role of child welfare managers in promoting agency performance through experimentation. *Children and Youth Services Review*. 2009; 31(1):112–118.

- McBeath B, Meezan W. Market-based disparities in foster care service provision. *Research on Social Work Practice*. 2008; 18(1):27.
- McBeath B, Meezan W. Governance in motion: Service provision and child welfare outcomes in a performance-based, managed care contracting environment. *Journal of Public Administration Research and Theory*. 2010; 20(1):101–123.
- McCarthy, J.; Van Buren, E.; Irvine, M. *Child and Family Service Reviews 2001–2004: A Mental Health Analysis*. Washington DC: National Technical Assistance Center for Children's Mental Health. Georgetown University Center for Child and Human Development; 2007.
- McCullough, C. *Financing and contracting practices in child welfare initiatives and Medicaid managed care*. Washington DC: Child Welfare League of America Press; 2004.
- McCullough, C.; Lee, E. *Program and fiscal design elements of child welfare privatization initiatives*. Washington DC: US Department of Health and Human Services; 2007.
- McCullough, C.; Schmitt, B. *Systems integration and management institute 2001: Management, finance, and contracting survey final report*. Washington DC: Child Welfare League of America Press; 2003.
- Meezan W, McBeath B. Market-based disparities in foster care outcomes. *Children and Youth Services Review*. 2008; 30(4):388–406.
- Miller K, Fisher P, Fetrow B, Jordan K. Trouble on the journey home: Reunification failures in foster care. *Children and Youth Services Review*. 2006; 28(3):260–274.
- Norton E, Wang H, Ai C. Computing interaction effects and standard errors in logit and probit models. *Stata Journal*. 2004; 4:154–167.
- Pfefferman D, Skinner C, Holmes D, Goldstein H, Rasbash J. Weighting for unequal selection probabilities in multilevel models. *Journal of the Royal Statistics Society, B*. 1998; 60:123–140.
- Prottas, J. *People processing: the street-level bureaucrat in public service bureaucracies*. Lexington Books; 1979.
- Raudenbush, S.; Bryk, A. *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage; 2002.
- Rizzo J, House R, Lirtzman S. Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*. 1970:150–163.
- Rubio-Stipek M, Peters L, Andrews G. Test-retest reliability of the computerized CIDI (CIDI-Auto): Substance abuse modules. *Substance Abuse*. 1999; 20(4):263–272. [PubMed: 12511833]
- Smith B. Job retention in child welfare: Effects of perceived organizational support, supervisor support, and intrinsic job value. *Children and Youth Services Review*. 2005; 27:153–169.
- Smith B, Donovan S. Child welfare practice in organizational and institutional context. *Social Service Review*. 2003; 77(4):541–563.
- Spybrook, J.; Raudenbush, S.; Liu, X.; Congdon, R.; Martinez, A. *Optimal Design for Longitudinal and Multilevel Research: Documentation for the "Optimal Design" Software*. 2008.
- StataCorp, L. *Stata statistical software: Release 10.0*. College Station, TX: Stata Corporation; 2007.
- Stroh L, Brett J, Baumann J, Reilly A. Agency theory and variable pay compensation strategies. *Academy of Management Journal*. 1996:751–767.
- Thomas K, Ellis A, Konrad T, Holzer C, Morrissey J. County-level estimates of mental health professional shortage in the United States. *Psychiatric Services*. 2009; 60(10):1323. [PubMed: 19797371]
- Tilbury C. The influence of performance measurement on child welfare policy and practice. *British journal of social work*. 2004; 34(2):225.
- Unruh J, Hodgkin D. The role of contract design in privatization of child welfare services: The Kansas experience. *Children and Youth Services Review*. 2004; 26(8):771–783.
- Van Slyke DM. The mythology of privatization in contracting for social services. *Public Administration Review*. 2003:296–315.
- Walters, E.; Kessler, R.; Nelson, C.; Mroczek, D. *Scoring the World Health Organization's Composite International Diagnostic Interview Short Form (CIDI-SF)*. 2002. <http://www.who.int/msa/cidi/CIDISFScoringMemo12-03-02.pdf>

- Wells S, Johnson M. Selecting outcome measures for child welfare settings: Lessons for use in performance management. *Children and Youth Services Review*. 2001; 23(2):169–199.
- Wittchen H. Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): A critical review. *Journal of Psychiatric Research*. 1994; 28(1):57–84. [PubMed: 8064641]
- Wright V, Radel L. The Privatization of Child Welfare Services: Issues and Efforts at the Federal Level. *Professional Development: International Journal of Continuing Social Work Education*. 2007; 10(3):7.
- Wulczyn F. Federal fiscal reform in child welfare services. *Children and Youth Services Review*. 2000; 22(2):131–159.
- Yilmaz, Y.; Hoo, S.; Nagowski, M.; Rueben, K.; Tannenwald, R. Fiscal disparities across states, FY 2002. Washington DC: Urban Institute; 2007.
- Yoo J. The relationship between organizational variables and client outcomes: a case study in child welfare. *Administration in Social Work*. 2002; 26(2):39–61.
- Yoo J, Brooks D. The role of organizational variables in predicting service effectiveness: An analysis of a multilevel model. *Research on Social Work Practice*. 2005; 15(4):267.
- Young, N.; Gardner, S. Navigating the pathways: Lessons and promising practices in linking alcohol and drug services with child welfare (SMA-02-3639). Rockville, MD: Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration; 2002.

Table 1

Descriptive Statistics (N=622)

	Mean	Std Error	Min	Max
Dependent Variables				
<i>Average hours per month caseworker spent on services to family</i>				
Case management or referrals	5.26	7.69	0	80
In-home services	7.74	27.84	0	560
Social services received by permanent caregivers				
Number of social services	1.04	0.99	0	6
Behavioral health services received by permanent caregivers [restricted on need]				
Mental health services (N=461)	46%	--	0	1
Substance abuse treatment (N=355)	48%	--	0	1
Independent Variables				
Raw Variables				
Performance-based contracting (PBC)	25%	--	0	1
Caseworker role overload	3.79	0.75	1	5
Analytic Variables				
PBC and high role overload (PBC=1 and role overload ≥4)	16%	--	0	1
PBC and low role overload (PBC=1 and role overload <4)	9%	--	0	1
Control Variables				
Non-metro location	16%	--	0	1
Local provider availability: % unmet mental health need	21.24	12.49	0	63
Local provider availability: # of facilities	44.88	65.27	1	266
Maltreatment: physical	25%	--	0	1
Maltreatment: sexual	14%	--	0	1
Maltreatment: neglect and other abuse (referent)	61%	--	0	1
Child gender: male	50%	--	0	1
Child age (years)	5.57	4.77	0	16
Child has special needs	74%	--	0	1
Caregiver: father	7%	--	0	1

	Mean	Std Error	Min	Max
Caregiver: not father (referent)	93%	--	0	1
Caregiver race: black	25%	--	0	1
Caregiver race: hispanic	19%	--	0	1
Caregiver race: white and other race (referent)	56%	--	0	1
Caregiver insurance: private	25%	--	0	1
Caregiver insurance: self-pay	32%	--	0	1
Caregiver insurance: public (referent)	43%	--	0	1
Caregiver has a behavioral health problem	53%	--	0	1

Table 2

Model Results: Average hours per month caseworker spent providing services to family

	Case management or referrals				In-home services				
	Negative Binomial				Negative Binomial				
	N=534				N=515				
	Main effects		Interaction		Main effects		Interaction		
IRR	S.E.	P> t	IRR	S.E.	P> t	IRR	S.E.	P> t	
Performance-based contracting (PBC)	0.88	0.15	--	--	0.58	0.11	**	--	--
Caseworker role overload	0.75	0.13	+	--	1.11	0.24	--	--	--
PBC and high role overload	--	--		0.65	0.14	*	--	0.48	0.12
PBC and low role overload	--	--		1.43	0.23	*	--	0.69	0.13
Non-metro location	1.17	0.22		1.28	0.27		1.39	0.38	1.39
Local provider availability	1.00	0.01		1.00	0.01		1.00	0.01	1.00
Type of maltreatment: Physical abuse	1.01	0.20		1.02	0.20		1.04	0.27	0.97
Type of maltreatment: Sexual abuse	1.02	0.26		1.01	0.26		0.65	0.18	0.61
Child is a male	1.05	0.21		1.10	0.19		0.93	0.20	0.96
Child age	1.02	0.02		1.02	0.02		1.07	0.02	1.07
Child has special needs	0.80	0.14		0.81	0.15		1.78	0.43	1.79
Caregiver is a father	0.91	0.38		0.96	0.45		1.21	0.49	1.24
Caregiver race: Black	0.90	0.16		0.92	0.16		1.79	0.47	1.84
Caregiver race: Hispanic	1.51	0.48		1.55	0.51		1.16	0.29	1.20
Caregiver insurance: Private	1.07	0.13		1.11	0.14		0.48	0.07	0.47
Caregiver insurance: Self-pay	1.69	0.31	**	1.76	0.30	**	1.02	0.26	1.05
Caregiver has a behavioral health problem	1.27	0.30		1.19	0.20		1.72	0.38	1.77
alpha	1.24	0.13		1.23	0.13		1.88	0.26	1.88

+ p<0.10

* p<0.05

100> p

10> p
**

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Table 3

Model Results: Social services received by caregiver

	Number of supportive services					
	Poisson					
	N=557					
	Main effects			Interaction		
	IRR	S.E.	P> t	IRR	S.E.	P> t
Performance-based contracting (PBC)	0.94	0.12	--	--	--	--
Caseworker role overload	0.95	0.08	--	--	--	--
PBC and high role overload	--	--	--	0.62	0.09	**
PBC and low role overload	--	--	--	1.02	0.13	
Non-metro location	1.33	0.26		1.34	0.25	
Local provider availability	1.00	0.05		1.00	0.01	
Type of maltreatment: Physical abuse	0.69	0.12	*	0.68	0.12	*
Type of maltreatment: Sexual abuse	0.53	0.10	**	0.53	0.10	**
Child is a male	0.89	0.10		0.88	0.10	
Child age	0.99	0.01		0.99	0.01	
Child has special needs	1.41	0.23	*	1.51	0.21	*
Caregiver is a father	0.41	0.18	*	0.40	0.17	*
Caregiver race: Black	0.72	0.15		0.71	0.15	
Caregiver race: Hispanic	0.84	0.17		0.83	0.17	
Caregiver insurance: Private	0.82	0.16		0.80	0.15	
Caregiver insurance: Self-pay	0.91	0.11		0.92	0.11	
Caregiver has a behavioral health problem	1.16	0.18		1.14	0.17	

+ p<0.10

* p<0.05

** p<0.01

100>d

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Table 4

Model Results: Caregiver receipt of needed behavioral health services

	Mental health service receipt				Substance abuse treatment*				
	Logistic				Logistic				
	N=239				N=140				
	Main effects		Interaction		Main effects		Interaction		
	OR	S.E.	P> t	OR	S.E.	P> t	OR	S.E.	P> t
Performance-based contracting (PBC)	0.29	0.16	*	--	--	--	0.71	0.36	--
Caseworker role overload	1.18	0.41	--	--	--	--	1.23	0.43	--
PBC and high role overload	--	--	--	0.45	0.21	+	--	--	0.09 0.12 +
PBC and low role overload	--	--	--	0.07	0.08	*	--	--	0.86 0.42
Non-metro location	1.46	0.85	--	1.28	0.79	--	6.90	8.09	6.68 7.90
Local provider availability	1.00	0.02	--	1.00	0.02	--	2.01	0.39	** 2.05 0.46 **
Type of maltreatment: Physical abuse	1.85	0.98	--	2.06	1.15	--	3.68	2.72	+ 3.81 3.00 +
Type of maltreatment: Sexual abuse	1.14	0.63	--	1.28	0.77	--	--	--	-- --
Child is a male	1.38	0.48	--	1.49	0.53	--	0.32	0.20	+ 0.27 0.18 *
Child age	1.06	0.05	--	1.05	0.05	--	0.83	0.05	** 0.86 0.05 *
Child has special needs	1.55	0.83	--	1.23	0.64	--	0.86	0.47	0.63 0.32
Caregiver is a father	0.60	0.47	--	0.56	0.42	--	1.98	2.42	1.44 1.72
Caregiver race: Black	0.30	0.16	*	0.23	0.14	*	0.76	0.51	0.69 0.46
Caregiver race: Hispanic	0.34	0.16	*	0.29	0.15	*	0.36	0.33	0.28 0.26
Caregiver insurance: Private	0.67	0.42	--	0.73	0.48	--	0.09	0.07	** 0.11 0.10 *
Caregiver insurance: Self-pay	0.43	0.28	--	0.42	0.26	--	0.81	0.52	0.98 0.69
Caregiver has a behavioral health problem	1.72	0.58	--	1.99	0.67	*	18.24	18.60	** 12.95 9.19 **

^o Sexual abuse perfectly predicts failure; this variable and 3 observations were dropped from the model

+ p<0.10

* p<0.05

100> p

10> p
**

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