A Multilevel Analysis of Individual and Community Factors Associated With Case Dispositions Following Child Maltreatment Investigations

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Abstract
Understanding service disposition pathways is critical to provide deeper insight into why certain subgroups of the population are at risk for recurrent Child Protective Services (CPS) involvement and may highlight disparities across groups or geographic areas. Using the Decision-Making Ecology Framework as a lens, the present study examines whether service disposition pathways are influenced by risk assessment, safety concerns, child age, maltreatment type, previous CPS involvement, and/or county-level structural vulnerability. We linked administrative data from New Mexico's Department of Children, Youth and Families (DCYF) to data from the American Community Survey. Multilevel models examining associations between case (N = 12,960) and county (N = 33) characteristics revealed that both case (age, maltreatment type, risk/safety assessments, previous CPS involvement) and county-level factors (transportation and housing) were associated with service disposition. Additionally, we observed considerable variation at the county level in both the provision of services and the relationship between risk assessment and service provision. By linking different factors of the decision-making process in child welfare cases to intervention strategies, the analysis reveals that the perception of risk can vary based on geographical context resulting in different outcomes for families who have similar risks but different county-level vulnerabilities.

Keywords
service provision, multilevel model, risk assessment, in-home services, ecological risk

Introduction

Families who come to the attention of child welfare agencies due to concerns about child maltreatment face exceptionally complex needs including substance misuse, physical and mental health problems, and/or food and housing instability (Smith et al., 2017). Per the 2023 Kids Count data profile, New Mexico, the location of our study, is ranked last (50th) in the United States based on indicators of economic well-being, education, health, and community (Kids Count, 2023). Addressing the needs of children and families requires interconnectedness between child welfare organizations, community organizations and service providers. As a result, child welfare organizations operate within a network of human service agencies to provide intervention following child abuse or neglect (He et al., 2015). A better understanding of these service disposition pathways is critical to provide deeper insight into why certain subgroups of the population are at risk for recurrent CPS involvement and may highlight disparities across groups or geographic areas (Fluke et al., 2019).

Existing research does not provide sufficient insight into the full range of potential service disposition outcomes (i.e., community-based services, home-based services, justice-related services, refused services, or otherwise offer no service) following substantiated maltreatment. Therefore, we seek to fill a gap in the literature on service provision disposition to better understand variability in disposition outcomes and associations between disposition outcomes and a broad range of case-related (e.g., maltreatment type, safety

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score) and contextual factors (poverty rate, crowded housing). To do so, we address the following research questions: (1) Which case-level characteristics are associated with service intervention disposition? (2) Which county-level characteristics are associated with service intervention disposition? (3) Does service intervention disposition vary across counties? and (4) Does the child's risk assessment score, an indication of future maltreatment risk, differently impact service intervention disposition across counties?

Child Welfare Safety and Risk Assessments in New Mexico

New Mexico, a state-administered child welfare system, standardizes intake procedures and structures across its thirty-three counties (Child Welfare Information Gateway, 2018). When Child Protective Services (CPS) receives a referral about potential abuse, neglect, or other maltreatment, it conducts an initial screening. Each intake unit takes responsibility for responding to allegations of child maltreatment from both non-mandatory and mandatory reporters. If a report warrants investigation after the referral screening, an in-person assessment, including a risk assessment protocol, is conducted to guide the decision-making process. If a case is screened-in, skilled caseworkers perform safety and risk assessments to collect information about potentially dangerous family situations and any current, significant, and clearly observable threats to a child's safety, both past and present. Safety assessments to determine whether the child is in danger of imminent and serious harm include inter alia parental use of excessive discipline or physical force, sexual exploitation of the child, hazardous physical living conditions and level of danger posed by the child (*N*.M. Code R. §8.10.3.7). While based on similar indicators of harm, in contradistinction to a safety assessment, a risk assessment determines the likelihood of future harm (Rycus & Hughes, 2008). In New Mexico, as elsewhere, certain case characteristics automatically deem the case 'high risk,' including non-accidental physical injury to an infant or injury requiring medical treatment, prior death of a child due to abuse or neglect and cases involving child labor trafficking (Children Youth & Families, 2020). In these cases, further assessments are conducted to identify the specific services that the family may need to address the issues that led to the maltreatment such as counseling services, parenting classes, and substance abuse treatment. The term "investigation disposition" refers to the outcome or conclusion of the investigation, which in this context, is the determination of what services, if any, are required for the family. This decision is based on the findings of risk assessments conducted during an investigation. In New Mexico, disposition options include closing the case (no services), referring the family to community providers, providing in-home services (IHS), or referring the case for

possible legal action (*N*.M. Code R. §8.10.3.19). Alternatively, the family may refuse services altogether.

The Decision-Making Ecology Framework

First described in the 1990s by Baumann et al., the Decision-Making Ecology (DME) focuses on understanding how decisions are made within the context of child welfare in light of both individual assessments and broader contextual processes (Baumann et al., 2014). The DME framework views the sequence of decisions made by agency staff as a continuum of decisions that are interconnected and mutually reinforcing (Baumann et al., 2014; Dettlaff et al., 2015). While complex and uncertain (Dettlaff et al., 2015), factors that influence CPS decision-making include circumstances related to the child and family (e.g., level of risk), caseworker characteristics (e.g., training), organizational factors (e.g., workloads) and geographic contexts (e.g., state laws and policies) (Font & Maguire-Jack, 2015). The DME framework is particularly useful for understanding the connection between decision-making and processes regarding the use of evidenced-informed services at multiple levels in addition to understanding the interrelationships between these ecological factors (Baumann et al., 2014; Graham et al., 2015). This framework, which is specific to the field of child welfare, can be applied to decisions at any stage of the case (such as intake, disposition, removal, reunification, etc.), as well as to address issues of disproportionality within CPS cases (Baumann et al., 2014).

Decision Making in Child Welfare

Decisions made by child welfare professionals regarding service provision following substantiated child maltreatment are based on risk assessments that determine the likelihood of future harm (Child Welfare Information Gateway, 2018). To ensure consistency and comparability across cases, and to better identify at risk children, child risk assessments should be based on the same criteria regardless of external factors such as the availability of resources or place of residence. A large body of research on the decision-making process in child welfare emphasizes the need to consider multiple decision-making points along the service continuum. These decisions have primarily involved three critical aspects of CPS caseworkers' decision-making: 1) whether to remove the child from the home or to provide in-home services (Brink et al., 2015; Camasso & Jagannathan, 2013; Dettlaff et al., 2015; Gambrill, 2008); 2) whether to conduct a formal investigation or place the family on a non-investigative alternative path (Connell, 2020; Jones, 2015; McCallum & Cheng, 2016); and 3) whether to provide the family with *any* services or close the case altogether (Vis et al., 2023).

Rivaux et al. (2008) focused on three primary dispositional service outcomes among families referred to the Texas Department of Family and Protective Services: 1) no services/

case closure, 2) Family Based Safety Services (FBSS), or 3) removal to foster or substitute care. The study's findings showed that the provision of services varied according to risk scores. Children with the highest risk scores were more likely to be removed from their homes, while case closures were more common for children with the lowest risk scores. Although the decision to refer a family to supportive services was consistent with a safety model, African American children were more likely to have their case acted upon compared to White children including referrals to community services and interactions between risk assessment scores, race/ethnicity, and level of income resulted in disparate risk scores/outcomes (Rivaux et al., 2008). This study filled an important gap in the literature by suggesting that both service and removal decisions are conditioned by risk of future abuse/neglect to the child and further that the decision differentially impacts African American children and/or children living in poverty. An important question raised by this study, but not addressed, is whether community-level factors differentially affect service intervention provision decisions and/or whether the effect of future risk on service provision varies across communities. According to Rivaux et al. (2008), the absence of community resources may lower the risk threshold thereby impacting the decision to provide services. In such cases, if no services are available for the family, then home removal may be the only feasible choice. Therefore, if community-level factors differentially affect the service provision decision, and/or the effect of future risk on service provision varies across communities, then different risk thresholds would have dramatically different consequences for children depending on where they live.

One study based on the structured decision-making model (which utilizes both actuarial and clinical models of assessment) from Ohio, found similar associations between case dispositions and interventions (Mendoza et al., 2016). The study denoted three outcomes (i.e., transferred for ongoing services, case closure and referral to community-based services, or case closure) based on multiple risk factors (e.g., death to a child in the adult's care) in conjunction with risk assessment, abuse and neglect scales, and disposition of substantiation. Findings suggested that clinical dimensions of measurement better explained substantiations, while actuarial dimensions better explained service decisions (Mendoza et al., 2016). In the context of the present study, Mendoza and colleagues found that actuarial risk assessments are not solely predictive of service disposition, but rather clinical and actuarial measures are highly interrelated, that actuarial instruments do not perfectly predict risk, and that both clinical and actuarial determinations are considered when making referrals to treatment and supportive services. Other studies have also identified links between the organizational structure and the outcomes of child welfare decisions. However, these studies noted that the extent of influence varies depending on the specific organizational factor under examination. A study conducted by Smith et al. (2017) examined two aspects of

organizational structure: role specialization (the division of tasks within the organization) and service integration (whether child welfare agencies collaborate with other services, such as children's mental health). They found that investigations conducted at agencies with a specialist structure were less likely to include a referral to other services whereas investigations at multiservice agencies were more likely to include a referral. This study demonstrated that organizational structure plays a significant role in determining whether child welfare clients are referred to treatment and supportive services particularly those that go beyond the child welfare mandate.

Similarly, Vis et al. (2023) examined case- and agency-level variability in the decision to provide services following a child protection investigation in Norway. They found that variation between agencies was explained primarily by case variables including physical abuse and neglect. The authors did find evidence of differences in agency thresholds, but the differences were minimal when controlling for the referral reason. In contrast, other studies using administrative data have found that organization factors are *more* important than individual factors in explaining decision-making including substantiation (Font, 2015) and service provision (Lauritzen et al., 2018). Further, Jud et al. (2012) investigated factors related to the decision for ongoing child welfare or referral to specialized services and found that factors related to parents and households were more important compared to the child's needs (Jud et al., 2012). At minimum, these studies suggest that while case-level factors are important, there may be additional considerations beyond the immediate needs of the child that must be considered in the decision-making calculus of child welfare workers.

Community Structure and Child Welfare Decision-Making. There is limited evidence regarding the importance of allocating preventive service capacity for improving child protective systems in areas of social vulnerability (Wulczyn et al., 2013). Past studies have demonstrated associations between social vulnerability and child welfare systems involvement; however, fewer studies have examined associations between living in a socially vulnerable area and service intervention disposition pathways. A study by Wulczyn et al. (2013) discovered that the allocation of preventive services aligns with the level of need. Despite their identification as high need, these communities experience significant variation in allocations. As a result, they may receive fewer preventive investments compared to other communities. McCallum and Cheng (2016) examined investigative and noninvestigative alternative response dispositions in Kentucky, Louisiana, North Carolina, Missouri and Virgina. They found that the odds of receiving an alternative response compared to an investigatory response decreased by 3.2% and 16.3% for every 1-unit increase in the county housing vacancy and unemployment level, respectively. However, county-level poverty and public assistance levels were significantly associated with higher odds of receiving an alternative response compared to an investigatory

response. A similar study using a U.S. sample conducted by Font and Maguire-Jack (2015) examined how agency, geographic context, caseworker attributes and family characteristics influenced the decision to substantiate or remove the child from the home. They found that agency factors, particularly constraints on service accessibility, as well as the proportion of Latine families in the county exert a strong influence on substantiation decisions. The researchers also observed that certain case-related factors, such as prior involvement with child protective services and issues with parental mental health or substance abuse, could suggest a higher likelihood of a child's removal from their home. These studies, when viewed in conjunction with studies such as Rivaux et al. (2008), suggest that place-based characteristics may contextualize the decision-making processes of child welfare workers in under-resourced areas characterized by elevated levels of social vulnerability.

The Present Study

The response to an initial child protective services investigation is a key predictor of future CPS involvement (Fluke et al., 2019); yet little is known about multisystem influences on the responses to CPS investigations (Dettlaff et al., 2015; Font & Maguire-Jack, 2015). Thus, we chose the Decision-Making Ecology (DME) framework, a useful tool in exploring simultaneous ecological factors incorporated in decision-making, to inform the present study with the goal of assessing variations in post-investigation intervention dispositions across counties and identifying individual- and county-level predictors of these dispositions. We incorporate the likelihood of service refusal, a factor that has seldom been considered or included in the decision-making process. Research shows that service refusal is more likely when a non-collaborative relationship between the family and CWS exists (Rustad, 2024). Therefore, research should incorporate level of family engagement as a critical factor of the DME (Rustad, 2024). Additionally, while many studies have extensively examined organizational structure, only a few have focused on the broader role of the community in providing context for CPS decision-making. The overall goal of this study was to assess how case and county-level characteristics relate to service intervention disposition pathways. We used multilevel modeling to examine associations between case- and county-level characteristics and the decision to refer the family to legal services, in-home services, community services, the decision that services were not necessary, or the family's refusal of services.

Method

Data

The New Mexico Children, Youth and Families Department (CYFD), the state organization that suspected child abuse and neglect cases are reported to and the organization that then substantiates those cases, originally collected the data used in this study. The New Mexico Community Data Collaborative, a data analytic organization under the umbrella of the New Mexico Department of Health, acquired and distributed the information for public distribution (New Mexico Community Data Collaborative, n.d.). The data consisted of children who were screened-in and substantiated for suspected child maltreatment from 2008-2015. During the initial investigation, CYFD workers assessed factors related to the safety of the family's situation and based on the child's perceived need, provided a variety of different service intervention disposition referrals to the families.

Variables

Dependent variable. We created a multinomial variable measuring the intervention disposition that included five categories of referrals. Under New Mexico policy, *legal services* can be sought if: a) the child has a significant risk of being abused or neglected; b) the child is in protective service custody; c) the family refuses services; or d) appropriate and available services are not available *and* the child is chronically absent from school without an authorized excuse, has run away from home or the child's parent, guardian or custodian refuses to allow the child to return home (N.M. Code R. §8.10.7.27). New Mexico uses the term "in-home services" (IHS) to refer to home-based services and programs designed to preserve the family unit. Based on service need, child welfare workers offer IHS to higher functioning families deemed to have lower risk. Under New Mexico law, a family is eligible to participate in IHS without regard to income. A family may be eligible to receive IHS when the child has been determined to be conditionally safe and the risk of child abuse or neglect has been determined to be moderate or high, or the child has been determined to be unsafe and the risk of harm has been determined to be very low, low, moderate, or high (N.M. Code R. §8.10.6.9). Despite attempts to address the diverse and complex needs of high-risk families, a sizable number of these children and families still do not receive any services. Furthermore, a family can altogether refuse the services to which they are mandated or alternatively be directed to a range of "community-based services" specific to need, for example, based on mental health, substance misuse, domestic violence and/or housing.

Independent Variables

Level 1 factors. These data include case-level characteristics including child maltreatment type (physical abuse, sexual abuse, physical neglect) coded as present (=1) or absent (=0), risk level (1 = very low risk to 4 = high risk), safety level (=1 if the child was deemed unsafe; zero = conditionally safe or safe), and child age in years. We calculated previous child welfare involvement by adding up the number of previous

unsubstantiations and substantiations that occurred prior to the current investigation. **Level 2 Factors:** We downloaded county-level covariates that measure neighborhood structural vulnerability from the American Community Survey (2011 – 2015) and merged them with the administrative data using county FIPS codes (refer to Supp Table 1). The variables were selected from the Center for Disease Control's Social Vulnerability Index (CDC's SVI) which has repeatedly been used in previous studies to examine the correlates of child welfare involvement (Barboza-Salerno, 2020a, 2020b; Davis & Miller, 2014; Galli, 2023; Shapiro et al., 2024). Within the SVI, we selected specific community factors based primarily on past research and included each factor separately so that we are able to identify which variables significantly predict disposition outcomes.

Analysis

In the present study, at the first level of analysis, there were 27,135 children nested in New Mexico's 33 counties (Level-2 units). Because service provision operates through a centralized process at the county level, families residing within the same county are likely to have shared experiences. In fact, in state organized systems, such as New Mexico, we expect all counties to operate similarly in accordance with state policy; hence, the county is a relevant geographical unit (Font & Maguire-Jack, 2015; Maguire-Jack, 2014). Due to potential violations of the assumption of independence of individual-level observations within counties (Raudenbush & Bryk, 2002), we utilized random effects models that take into consideration heterogeneity in case-level characteristics across counties. The generalized multilevel model link function for the logistic distribution $(\pi^2/3)$ was used to calculate the intraclass correlation (ICC). The residual method with robust estimation was specified to manage potential violations of model assumptions. We used "community-based services" as our reference category for the purpose of comparison. Five models were evaluated, four nested models and a full model, as follows:

- **Model 1 (unconditional varying intercept)**: An unconditional two-level random-intercept model to test how much variance in the natural logarithm of the odds ratio of investigation dispositions (i.e., log[φ/(1 - φ)], φ = probability of case disposition i) was explained by level-2-unit (i.e., county) variations. This model was run with no predictor variables to estimate the intraclass correlation coefficient (ICC) of each category of the dependent variable.
- **Model 2 (varying intercept w/individual-level covariates):** A two-level random-intercept model that included Level-1 predictors. This model incorporated all potential predictors on Level 1 and the intercept on Level 1 was allowed to vary across Level-2 units.
- **Model 3 (varying intercept w/county-level covariates):** A two-level random-intercept model that included Level-2 predictors. This model incorporated

all potential predictors on Level 2 and the intercept on Level 1 was allowed to vary across Level-2 units.
- **Model 4 (model 2 w/covariates)**: County-level variables were incorporated into Model 2.
- **Model 5: full model (Varying intercept and slopes):** This model incorporated all potential predictors on Level 1 with a random intercept and the slope of the Level 1 predictor of risk was allowed to vary across Level 2 units. The random intercept and slope model allowed the risk assessment variable to vary randomly across counties.

In the following equations, $\phi_{\mathrm{k}ij}$ ($k = 0, 1, 2, 3, 4$) denotes the probability of the substantiated child (ith child in the jth county) falling into the kth category of the dependent variable and the fourth category is set as the reference group (i.e., community-based intervention). Then, response probabilities for categories of the dependent variable are

$$\phi_{0ij} = P(ID = 0|\beta_j)$$

$$\phi_{1ij} = P(ID = 1|\beta_j)$$

$$\phi_{2ij} = P(ID = 2|\beta_j)$$

$$\phi_{3ij} = P(ID = 3|\beta_j)$$

$$\phi_{4ij} = P(ID = 4|\beta_j) = 1 - \phi_{0ij} - \phi_{1ij} - \phi_{2ij} - \phi_{3ij}$$

and

$$\log\left[\frac{\phi_{kij}}{\phi_{4ij}}\right] = \beta_{0j(k)} + + \sum_{i=1}^{m} \beta_{mj(k)} x_{ij} \ \forall k \in (0, 1, 2, 3),$$

where $\beta_{mj(k)}$'s are the regression coefficients for the mth explanatory variable in the equation for category k and β_j indicates a vector containing all $\beta_{mj(k)}$'s for the jth county. The level 2 equations specify $\beta_{mj(k)}$'s as fixed or random. For example, the random intercept at level 2 is specified as

$$\beta_{0j(k)} = \gamma_{00(k)} + \sum_{t=1}^{4} \gamma_{01(k)} x_j + u_{0j(k)},$$

where the $\gamma's$ are county-level covariates. Model fit was assessed using the Likelihood Ratio Test (LRT). The LRT is χ^2 distrbuted with degrees of freedom (df) equal to the number of additional parameters in the full model. The best fitting model reported here included the random intercept, random slope for risk assessment, and all case-level and county-level covariates (Table 1). We mitigated the impact of covariance among independent variables by examining the Variance Inflation Factor (VIF) scores. Using the more conservative threshold >5 (O'brien, 2007), and noting that multicollinearity is less of a problem when the sample size is large (Agyekum, Adarkwa, & Kusi, 2023), all VIF scores except for poverty (VIF = 8.21) and no high school were deemed potentially problematic (VIF = 6.88). Since omitting these variables did not

change the substantive analysis, however, they were retained. Further, we mean centered all continuous variables which may additionally minimize the impact of collinearity in some situations (Iacobucci et al., 2016). Because significance levels in categorical modes are conservative, we follow others in reporting significance levels outside of conventional standards for variance parameters only ($p < .10$; Heck et al., 2013). Finally, we used robust estimation to deal with potential violations of model assumptions.

Results

In the total sample, children who were confirmed as victims of maltreatment had an average age of 6.58 (SD = 5.25; Table 2). Around 39% of children were perceived to be at "moderate" risk (39.4%), while 26.8% were seen as "high" risk and 3% were considered to have a "very low" risk of future maltreatment. A significant majority of children were deemed safe (72.2%), while 27.8% were considered unsafe. The most common type of confirmed maltreatment was neglect (80.3%), followed by physical abuse (32.4%) and sexual abuse (4.1%). The most common referral was to community-based services (51.8%), followed by legal services (16.4%) and IHS (14.1%). Services refusal and "services not necessary" characterized about 1 in 20 and 1 in 10 cases, respectively. The disposition of service intervention varied significantly both overall ($p < .001$) and across counties ($p < .001$; Supplemental Figure 1). Families referred to legal services were more likely to have children confirmed for sexual abuse (5.3%) or physical neglect (90.9%) compared to those referred to community-based services. Those considered higher risk (66.9%) or unsafe (83.3%) and with more prior contact with CPS (mean = 2.40, SD = 3.32) were more likely to be referred to legal services. Older children (mean = 7.63, SD = 4.93) who were considered low risk (49.8%) and safe (93.4%) were more likely to have a case disposition deemed "services not necessary." Families with fewer previous interactions with CPS were more likely to be referred to community-based services (mean = 1.14, SD = 2.08).

Is There Significant County-Level Variation in Outcomes?

First, we estimated an unconditional model to examine the extent of variability in case referrals across counties (Table 3).

The variance components show that the four intercepts vary significantly across counties ($\sigma^2_{\mu0j(1)} = .146, SE = .052,$ $\sigma^2_{\mu0j(2)} = 1.356, SE = .379, \sigma^2_{\mu0j(3)} = .614, SE = .184, \sigma^2_{\mu0j(4)} = .935, SE = .281$). In other words, the model detected significant variability in the type of intervention disposition across counties. The odds of a post-investigation pathway involving the legal system, IHS, "services not necessary" or "refused services" is significantly lower compared to community-based services. The probability of being referred to legal services is .192 (log odds = −1.009, OR = .364, $p < .001$), IHS is .115 (log odds = −1.517, OR = .219, $p < .001$), "services not necessary" is .109 (log odds = −1.575, OR = 0.207, $p < .001$), service refusal is .057 (log odds = −2.232, OR = .107, $p < .001$) and community-based services is .527 (see Table 3 notes for calculation). The ICC (ρ) quantifies the proportion of the variance in the intervention pathway attributable to level-2 units, namely, counties (Luke, 2005). The calculation showed ICC values equal to 4.2%, 29.2%, 15.7% and 22.1% for legal services, IHS, "services not necessary" and refused services, respectively. Overall, the results show significant county-level variability in case disposition outcomes across all categories of the dependent variable even though individual characteristics explain the majority of variation in outcomes.

Are Child and Family Factors Predictive of Intervention Dispositions?

Holding all other variables constant including the county-level random effect, the odds of a legal service referral are 1.247, 2.995 and 3.037 times higher in physical abuse (log odds = .221, $p = .014$), sexual abuse (log odds = 1.097, $p < .001$) and neglect (log odds = 1.111, $p < .001$) cases, respectively (Table 4). Further, the odds of a legal system referral are about 3.323 times higher (log odds = 1.201, $p < .001$) when children are perceived as unsafe compared to conditionally safe or safe. A history of prior CPS involvement increased the odds of legal system involvement by 1.123 (log odds = .116, $p < .001$). Each addition level of risk going from very low to high increased the odds of legal system referral by 336% (log odds = 1.472, $p < .001$). The odds of referral to IHS decreased for children who were substantiated for sexual abuse (log odds = −1.241, $p < .001$) and for each year of age (log odds = −.042, $p < .001$). Children with higher risk

Table 1. Model Fit for Nested Models.

Model	Model *LL*	−2*LL	Δ	LRT X2	*p*
1: Unconditional model	−17,051.41	34,102.81	--	9121.89	<.001
2: Add Level-1 covariates only	−13,404.94	26,809.87	−7292.94	5817.23	<.001
3: Add Level-2 covariates only	−16,261.82	32,523.64	5713.77	1136.28	<.001
4: Add Level-1 and Level-2 covariates	−13,370.27	26,740.54	−5783.10	1132.10	<.001
5: Add Latent slope for risk to model 4	−13,334.94	26,669.88	−7432.93	10,563.85	<.001

Notes: Models 1, 2, 3 and 4 are compared to the nested model (e.g., 2 v 1, 3 v 2). For example, in the comparison between models 2 and 1, the model with Level-1 covariates is compared to the model without covariates (i.e., no fixed effects). Model 5 is compared to the nested model random coefficients meaning that the random intercept model is compared with the model with random intercept and random slope for risk assessment.

Table 2. Descriptive Statistics for Level 1 Variables and Simple Tests of Differences Between Intervention Outcomes.

				Intervention outcome disposition			
	Total	Legal	IHS	Services not Necessary	Refused	Community-based	
	M (SD)/N (%)	M (SD)/N (%)	M (SD)/N (%)	M (SD)/N (%)	M (SD)/N (%)	M (SD)/N (%)	p
Total	12,960 (100%)	2129 (16.4%)	1822 (14.1%)	1429 (11%)	734 (5.7%)	6846 (51.8%)	<.001
Level 1 variables							
Physical abuse (yes)	4193 (32.4%)	594 (27.9%)	594 (32.6%)	429 (30.0%)	212 (28.9%)	2364 (34.5%)	<.001
Sexual abuse (yes)	528 (4.1%)	113 (5.3%)	16 (.9%)	58 (4.1%)	11 (1.5%)	330 (4.8%)	<.001
Neglect (yes)	10,115 (80.3%)	1935 (90.9%)	1506 (82.7%)	1044 (73.1%)	597 (81.3%)	5033 (73.5%)	<.001
Risk score							
Very low	386 (3%)	15 (.7%)	14 (.8%)	97 (6.8%)	15 (2.0%)	245 (3.6%)	<.001
Low	3998 (30.9%)	172 (8.1%)	248 (13.7%)	711 (49.8%)	213 (29.0%)	2653 (38.9%)	
Moderate	5091 (39.4%)	517 (24.3%)	843 (46.3%)	349 (47.5%)	349 (47.5%)	5091 (39.4%)	
High	3462 (26.8%)	1424 (66.9%)	716 (39.3%)	157 (21.4%)	157 (21.4%)	3462 (26.8%)	
Unsafe (yes)	3607 (27.8%)	1773 (83.3%)	713 (39.1%)	94 (6.6%)	93 (12.7%)	934 (13.6%)	<.001
Child age	6.58 (5.25)	6.01 (5.34)[a,b]	5.66 (5.02)[d,e,f]	7.63 (4.93)[a,d,g]	7.53 (5.25)[b,e,h]	6.69 (5.28)[c,f,h]	<.001
# Previous CPS involvement	1.44 (2.47)	2.40 (3.32)[a]	1.49 (2.36)[a,b]	1.38 (2.49)[a,c]	1.54 (2.45)[a,d]	1.14 (2.08)[a,b,c,d]	<.001

Notes: M = mean; SD = standard deviation; p = probability. p-values are based on tests of statistical significance using the Chi-square test of independence for categorical variables and ANOVA (analysis of variance) for continuous variables. Superscripts with the same letter are statistically different from each other as reported by the p-value reported in the table. For example, the mean age of children who were referred to legal services (6.01; i.e., "legal service referral") is significantly lower than the mean age of children for whom no services were necessary (7.63; i.e., "services not necessary") because the subscript (a) appears in the column associated with both legal service referral and "services not necessary" and the child's age reported for legal service referral is lower compared to the age reported in the column associated with "services not necessary."

Table 3. Unconditional Model Results.

					95% CI		
	Coef	Std. Error	t	Sig	Lower	Upper	Exp (Coef)
Fixed effects							
Legal system	−1.009	.0818	−12.336	<.001	−1.170	−.849	.364
Home services	−1.517	.2181	−6.956	<.001	−1.945	−1.090	.219
No additional services needed	−1.575	.1527	−10.316	<.001	−1.874	−1.276	.207
Refused services	−2.232	.1909	−11.693	<.001	−2.607	−1.858	.107
Random effects							
Legal system	.146	.052	2.832	.005	.073	.292	1.157
Home services	1.356	.379	3.576	<.001	.784	2.345	3.881
No additional services needed	.614	.184	3.339	<.001	.341	1.104	1.848
Refused services	.935	.281	3.333	<.001	.519	1.684	2.547

Notes. The predicted probability of community services (i.e., the omitted category) was computed as:
$$p(Y = \text{"Community Services"}) = \frac{1}{1+\sum_{c=1}^{C-1} \exp(n_{cj})} = \frac{1}{1+\exp(-1.0009)+\exp(-1.517)+\exp(-1.575)+\exp(-2.232)} = .5268.$$

scores (log odds = .830, p < .001) and who were unsafe (log odds = .933, p < .001) were more likely to receive IHS compared to community services. On the other hand, regarding the comparison between community services and "services not necessary," the odds of needing no additional services were higher for older children (log odds = .029, p < .001) and families with a history of prior CPS involvement (log odds = .063, p < .001) but lower for children who were substantiated for physical abuse (log odds = −.404, p = .026), sexual abuse (log odds = −.690,

p < .001) and among those with greater perceived risk (log odds = −.385, p < .001) and/or considered to be unsafe (log odds = −.909, p < .001). Finally, the odds of refusing services were higher for older children (log odds = .029, p = .005), children substantiated for neglect (log odds = .277, p = .034), and for families perceived to be higher risk (log odds = .246, p < .001) but lower for those deemed unsafe (log odds = −.307, p < .005). Refusing services was less likely among families substantiated for sexual abuse (log odds = −1.157, p < .001). All random

effects previously noted continued to be significant after level-1 variables were added to the model.

Are County-Level Predictors Associated With Case Disposition Outcomes?

At the county level, the odds of a referral to legal services were associated with higher levels of unemployment (log odds = .088 p = .026), disability (log odds = .081, p = .017), and fewer

people of color (log odds = −.017, p = .044). Regarding IHS versus community-based services, the odds of referral were higher for counties with higher percentages of single parent households (log odds = .169, p = .055) and lower among counties with more housing insecurity including multiunit dwellings (log odds = −.138, p = .016), mobile homes (log odds = −.050, p = .006) and crowded housing (log odds = −.279, p = .010). Individuals who live in counties with less access to vehicles were more likely to be in the category of

Table 4. Final Model With Random Slope and Intercept Effects.

Outcomes	Model Term	Coef	SE	t	Sig	95% confidence Interval		Exp (Coef.)
						Lower	Upper	
Legal	Intercept	−5.338	0.799	−6.682	0.000	−6.903	−3.772	0.005
	Level 1: Case level							
	Age	−0.057	0.006	−9.410	0.000	−0.069	−0.045	0.945
	Phys. Abuse	0.221	0.090	−2.457	0.014	−0.397	−0.045	1.247
	Sex abuse	1.097	0.175	−6.270	0.000	−1.440	−0.754	2.995
	Phys. Neglect	1.111	0.104	−10.712	0.000	−1.314	−0.908	3.037
	Unsafe	1.201	0.336	3.577	0.000	0.543	1.859	3.323
	Risk	1.472	0.074	19.879	0.000	1.326	1.617	4.356
	Prior CPS involvement	0.116	0.012	9.327	0.000	0.092	0.141	1.123
	Level 2: County level							
	Poverty %	0.007	0.040	0.188	0.851	−0.070	0.085	1.008
	Unemp. %	0.088	0.039	2.231	0.026	0.011	0.165	1.092
	No HS %	0.046	0.032	1.435	0.151	−0.017	0.110	1.047
	Disability %	0.081	0.033	2.463	0.017	0.017	0.145	1.084
	Single par. %	−0.015	0.060	−0.243	0.808	−0.132	0.103	0.986
	Minority %	−0.017	0.008	−2.018	0.044	−0.033	0.000	0.983
	Limited eng. %	−0.071	0.078	−0.903	0.366	−0.224	0.083	0.932
	Multi-unit %	−0.007	0.036	−0.209	0.835	−0.078	0.063	0.993
	Mobile homes %	−0.027	0.017	−1.575	0.115	−0.061	0.007	0.973
	Crowded housing %	−0.097	0.076	−1.282	0.200	−0.245	0.051	0.908
	No vehicle %	0.036	0.074	0.485	0.628	−0.109	0.181	1.037
IHS	Intercept	−5.855	1.527	−3.834	0.000	−8.848	−2.862	0.003
	Level 1: Case level							
	Age	−0.042	0.005	−7.937	0.000	−0.052	−0.031	0.959
	Phys. Abuse	0.127	0.087	−1.457	0.145	−0.297	0.044	1.135
	Sex abuse	−1.241	0.263	4.712	0.000	0.725	1.758	0.289
	Phys. Neglect	0.246	0.078	−3.166	0.002	−0.398	−0.094	1.279
	Unsafe	0.933	0.152	6.147	0.000	0.636	1.231	2.542
	Risk	0.830	0.088	9.457	0.000	0.658	1.002	2.294
	Prior CPS involvement	0.019	0.017	1.141	0.254	−0.014	0.053	1.020
	Level 2: County level							
	Poverty %	−0.006	0.069	−0.087	0.931	−0.141	0.129	0.994
	Unemp. %	−0.055	0.062	−0.890	0.374	−0.177	0.066	0.946
	No HS %	−0.042	0.048	−0.878	0.380	−0.135	0.052	0.959
	Disability %	0.030	0.067	0.445	0.656	−0.101	0.160	1.030
	Single par. %	0.169	0.088	1.918	0.055	−0.004	0.343	1.185
	Minority %	0.016	0.010	1.664	0.096	−0.003	0.035	1.016
	Limited eng. %	0.120	0.106	1.124	0.261	−0.089	0.328	1.127
	Multi-unit %	−0.138	0.058	−2.400	0.016	−0.251	−0.025	0.871
	Mobile homes %	−0.050	0.018	−2.763	0.006	−0.086	−0.015	0.951
	Crowded housing %	−0.279	0.108	−2.577	0.010	−0.491	−0.067	0.757
	No vehicle %	0.072	0.103	0.701	0.483	−0.129	0.273	1.075

(continued)

Table 4. (continued)

Outcomes	Model Term	Coef	SE	t	Sig	95% confidence Interval		Exp (Coef.)
						Lower	Upper	
No additional services	Intercept	−1.693	0.790	−2.142	0.032	−3.242	−0.144	0.184
	Level 1: Case level							
	Age	0.029	0.006	5.287	0.000	0.018	0.040	1.030
	Phys. Abuse	−0.404	0.182	2.220	0.026	0.047	0.760	0.668
	Sex abuse	−0.690	0.136	5.057	0.000	0.422	0.957	0.502
	Phys. Neglect	−0.181	0.152	1.188	0.235	−0.118	0.479	0.835
	Unsafe	−0.909	0.102	−8.922	0.000	−1.109	−0.709	0.403
	Risk	−0.385	0.063	−6.145	0.000	−0.508	−0.262	0.680
	Prior CPS involvement	0.063	0.014	4.506	0.000	0.035	0.090	1.065
	Level 2: County level							
	Poverty %	−0.031	0.048	−0.632	0.528	−0.125	0.064	0.970
	Unemp. %	0.079	0.057	1.386	0.166	−0.033	0.191	1.082
	No HS %	0.025	0.042	0.610	0.542	−0.056	0.107	1.026
	Disability %	−0.005	0.042	−0.108	0.914	−0.087	0.078	0.995
	Single par. %	0.051	0.069	0.735	0.462	−0.084	0.185	1.052
	Minority %	−0.018	0.012	−1.438	0.150	−0.042	0.006	0.982
	Limited eng. %	0.075	0.096	0.780	0.435	−0.113	0.262	1.077
	Multi-unit %	−0.040	0.034	−1.197	0.231	−0.106	0.026	0.961
	Mobile homes %	−0.010	0.021	−0.456	0.649	−0.051	0.032	0.990
	Crowded housing %	−0.183	0.101	−1.820	0.069	−0.380	0.014	0.833
	No vehicle %	0.201	0.078	2.590	0.010	0.049	0.353	1.223
Refused services	Intercept	−3.786	1.237	−3.061	0.002	−6.210	−1.361	0.023
	Level 1: Case level							
	Age	0.029	0.010	2.782	0.005	0.008	0.049	1.029
	Phys. Abuse	−0.123	0.185	0.668	0.504	−0.239	0.485	0.884
	Sex abuse	−1.157	0.189	6.124	0.000	0.786	1.527	0.315
	Phys. Neglect	0.277	0.130	−2.125	0.034	−0.533	−0.022	1.319
	Unsafe	−0.307	0.110	−2.796	0.005	−0.523	−0.092	0.735
	Risk	0.246	0.070	3.492	0.000	0.108	0.384	1.279
	Prior CPS involvement	0.024	0.020	1.205	0.228	−0.015	0.063	1.024
	Level 2: County level							
	Poverty %	0.120	0.061	1.956	0.049	0.000	0.239	1.127
	Unemp. %	−0.163	0.061	−2.658	0.008	−0.284	−0.043	0.849
	No HS %	−0.037	0.060	−0.614	0.539	−0.155	0.081	0.964
	Disability %	0.008	0.054	0.145	0.885	−0.097	0.113	1.008
	Single par. %	0.093	0.086	1.090	0.276	−0.075	0.262	1.098
	Minority %	−0.025	0.010	−2.438	0.015	−0.044	−0.005	0.976
	Limited eng. %	0.075	0.105	0.713	0.476	−0.131	0.280	1.078
	Multi-unit %	−0.095	0.057	−1.674	0.094	−0.207	0.016	0.909
	Mobile homes %	−0.030	0.018	−1.663	0.096	−0.066	0.005	0.970
	Crowded housing %	−0.065	0.097	−0.668	0.504	−0.254	0.125	0.937
	No vehicle %	0.090	0.091	0.990	0.322	−0.088	0.269	1.094

"services not necessary" (log odds = .210, p = .010). Finally, the odds of refusing services increased among individuals who lived in higher poverty counties (log odds = .120, p = .049) and decreased for individuals in counties with lower levels of unemployment (log odds = −.163, p = .008) and with fewer people of color (log odds = −.025, p = .015).

We used post-estimation to predict the likelihood of falling into each intervention outcome category across risk levels (from very low to high), while keeping all other variables at their mean values (Table 5). When the risk is low or very low, families are most likely to be referred to community-based services. Children deemed to be at very low or low risk were referred to community-based services with a probability of .58. Conversely, the likelihood of an intervention disposition pathway leading to legal service provision is .03 and .09 for families at very low risk and low risk, respectively. It is worth noting that this implies about 1 in 10 low-risk families are referred to legal services. Families at high risk are most likely to be referred to legal services (.38) but are least likely to receive community-based services (.33). Other probabilities can be read directly from the table. For those interested, Supplemental Tables 2 and 3 show the marginal probability of

service provision intervention across county-level poverty (mean/±1SD), and percent minoritized population (mean/±1SD) conditioned by risk assessment score (mean/±1SD)

Does the Effect of Risk Assessment on Intervention Disposition Vary Across Counties?

Finally, we examined whether the risk assessment score slopes vary across counties. To do so, we added risk as a random slope parameter in the model (Table 6). As shown in Table 6, the intercepts continue to vary across counties for the models associated with IHS (Coef. = 1.353, p = .014) and refused services (Coef. = .730, p = .040). The intercepts for legal services (Coef. = .626, p = .095) and "services not necessary" (Coef. = .388, p = .078) are significant at the $p < .10$ level. As well, the results show evidence that risk assessment varies across counties for the categories "IHS" (Coef. = .060, p = .050). Therefore, the results point to the varying effect of risk assessment score on IHS case disposition across counties. Figure 1 illustrates how intervention disposition pathways vary across levels of risk for all counties (i.e., overall; panel A) and for two specific counties: Bernalillo (panel B) and Colfax (panel C). The general pattern demonstrates that the probability of a community-based service or no service provision

referral declines with increasing level of perceived risk whereas the probability of a legal service or IHS referral increases with higher level of perceived risk (Figure 1, panel A). Panel B shows that Bernalillo County follows the general pattern whereas Colfax County does not. For example, IHS provision is more likely in Colfax County whereas community-based service provision is more consistent with the general (overall) pattern. Also, the probability of IHS provision declines with higher levels of perceived risk also contradicting the general trend.

Discussion

In the context of this study, the DME framework serves as a model for examining county-level factors in relation to case dispositions, perceived levels of risk and safety, types of maltreatment, and historical CPS outcomes. The results of this study affirm that both case-level and county-level factors influence the types of intervention services provided to families following confirmed child maltreatment. Our findings suggest that the majority of variations in disposition outcomes can be traced back to case- and county-level factors within each county. Despite accounting for these factors, we observed significant variation at the county-level in the provision of services. Additionally, we discovered variability at

Table 5. Post-estimation of Intervention Disposition Across Categories of Perceived Risk.

	Very Low			Low			Moderate			High		
	n_{kij}	$\exp^{(n_{kij})}$	Prob	n_{kij}	$\exp^{(n_{kij})}$	Prob	n_{kij}	$\exp^{(n_{kij})}$	Prob	n_{kij}	$\exp^{(n_{kij})}$	Prob
Legal	−2.85	0.06	0.03	−1.85	0.16	0.09	−0.86	0.43	0.21	0.14	1.15	0.38
IHS	−2.82	0.06	0.03	−2.06	0.13	0.07	−1.30	0.27	0.13	−0.54	0.58	0.19
No additional	−0.65	0.52	0.30	−1.07	0.34	0.20	−1.50	0.22	0.11	−1.92	0.15	0.05
Refused	−2.58	0.08	0.04	−2.33	0.10	0.06	−2.08	0.12	0.06	−1.83	0.16	0.05
Community	0.00	1.00	0.58	0.00	1.00	0.58	0.00	1.00	0.49	0.00	1.00	0.33

Notes. Probabilities were calculated based on the multinomial regression model used to predict the odds of case i in county j being in outcome category c. Then n_{kij} is the ratio of two odds, that is, the probability of each category, k, versus the selected reference category (community-based service provision). The estimated probability of service provision disposition can be calculated for each level of risk holding all other variables constant at their means.

Table 6. Random Slopes and Intercepts for Full Model.

Outcomes	Residual effect	Coeff	Std. Error	Z	Sig	95% confidence Interval	
						Lower	Upper
Legal	Intercept	0.626	0.375	1.671	0.095	0.194	2.023
	Risk	0.034	0.028	1.192	0.233	0.007	0.175
IHS	Intercept	1.353	0.551	2.456	0.014	0.609	3.005
	Risk	0.060	0.031	1.961	0.050	0.022	0.163
Services not necessary	Intercept	0.388	0.220	1.760	0.078	0.127	1.181
	Risk	0.047	0.029	1.604	0.109	0.014	0.161
Refused	Intercept	0.730	0.355	2.055	0.040	0.281	1.895
	Risk	0.023	0.029	0.808	0.419	0.002	0.261

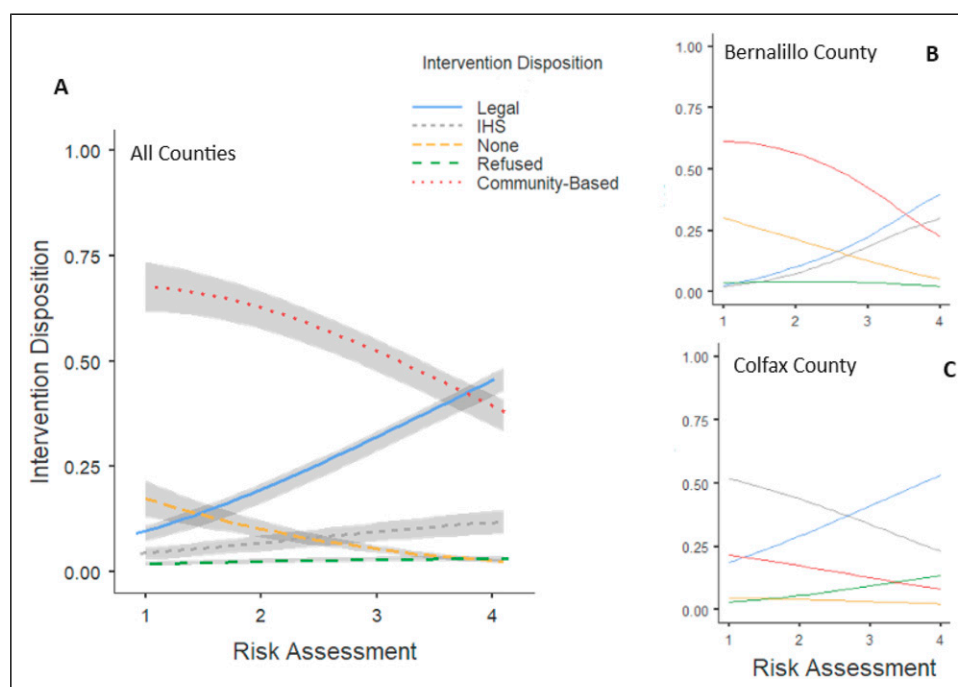*Notes.* Variance components using county as Level 2 factors.

Figure 1. (a) Predicted probability of service intervention disposition pathway across perceived levels of child risk controlling for case and county-level characteristics; (b) Predicted probability of service intervention disposition pathway for Bernalillo and (c) Colfax counties. Bernalillo follows the general pattern whereas Colfax deviates from the general pattern illustrating county-level variability across risk assessments.

the county-level in the risk assessment scores assigned by caseworkers for both the IHS pathway and the pathway with no service provision. Our findings are consistent with other reports demonstrating that decisions are made based on a variety of case characteristics apart from the risk and safety score and further reveal possible conflation between risk assessment scores and substantiated abuse (Dettlaff et al., 2011; English et al., 2002), past CPS involvement and the county in which the family resides. Our finding that the impact of risk assessment on intervention disposition pathways differs across counties resembles past research demonstrating significant heterogeneity in child welfare workers' perception of risk in different geographical contexts. This finding confirms anecdotal evidence that "what constitutes a serious problem, is not the same in all places and at all times, even though service provision for substantiated cases may be" (Vis et al., 2023, p. 327). This is particularly true in the present study given that we found evidence that both *where* you live and also the characteristics of the county you live in, such as level of unemployment, disability, housing and transportation insecurity, and race/ethnicity, predicted intervention disposition pathways beyond safety threats, assessed risk, and other vulnerabilities identified during the initial investigation (Merritt, 2020).

At the county level, unemployment and disability were associated with higher odds of legal service intervention; single parent households and housing insecurity (multi-unit dwellings, mobile homes, and overcrowded housing) was associated with higher odds of IHS; and lack of vehicular access was associated with higher odds of services being unnecessary. Our results align with those of other studies, suggesting that decision-making in child welfare cases is influenced not only by the types of assistance and services available to families, but also by the etiology and clinical significance of the case (Vis et al., 2023). We also found that higher levels of poverty and unemployment were linked to an increased likelihood of service refusal. This could be partly due to disparities in county-level structural vulnerability and their impact on decision-making processes. For instance, individuals affected by poverty and high unemployment rates might refuse services if they pose a barrier to securing or maintaining employment. Our analysis revealed that, all other factors being equal, families at low and very low risk are more likely to be referred to community-based services. However, a significant proportion (.42) are not. Furthermore, while high-risk families are more frequently referred to legal services, community-based services constituted about one-third of the referrals.

There are competing explanations for the observed results. First, it is possible that county-level factors (e.g., neighborhood poverty, lack of transportation, housing insecurity) are quantified on risk assessments as *individual* factors that impact the decision-making calculus from the least restrictive (i.e., IHS) to the most restrictive (i.e., legal services) disposition outcome, which includes possibly removing a child from their primary caregiver. For example, in the current

study, counties with a higher percentage of disabled individuals within the population are counties where there is an increased rate of court disposition. This could in part be attributed to previously shown associations between disability status, maltreatment experience, and criminal justice involvement (Mallett, 2014). Alternatively, disparities in service provision may persist due to the combined impact of lack of service availability and the belief that services will be helpful (or not) (Vis et al., 2023). In this case, case workers *must* take county-level factors into consideration as a part of their risk assessment. For example, a caseworker could decide to have a child removed from the home because their county lacks adequate transportation services or cannot secure adequate housing, regardless of the family's own access to a vehicle or housing situation. Future research would benefit from attempting to shed more light on these varying explanations, for example, by mapping the geographic distribution of disability, health, education, domestic violence, and behavioral health services in relation to the types of service interventions provided in child welfare cases to confirm or dispel this suspicion.

Finally, we note that our variable capturing the effect of race/ethnicity on service provision was negative and further that this result was robust across all models. We found that the percentage of non-Whites in the county was associated with *lower* odds of having a disposition involving legal services and service provision refusal. This finding, which may be surprising, could be due to the large presence of Latine persons in the state and within each county (Supp Table 2). In this regard, the results are consistent with other studies suggesting that communities with more foreign-born and Latine residents may be protective against child maltreatment reports (Kim & Kim, 2023) and with the "Hispanic paradox" where "Hispanics" have lower risks compared to similarly situated Whites (Kim & Drake, 2018). Our results are also consistent with Kim et al. (2017) who found that investigations conducted at agencies with a higher proportion of reports regarding Indigenous children are actually less likely to include a referral. In explaining this finding, they noted that the proportion of Indigenous reports may be a proxy for the availability of resources in communities that serve Indigenous children and families. Another explanation, worthy of future investigation, is that whereas Latine families face multiple unique challenges including legislative initiatives that restrict access to supportive services, Latine families also have deeply rooted cultural values and connections that serve as protective factors against common risk factors for child abuse and neglect, such as mental health and substance use problems (Dettlaff & Johnson, 2011).

Implications for Child Welfare Policy and Practice

The DME framework allows for a more critical assessment of the potential response bias resulting from variations among workers and the system that is charged with making decisions to maintain child safety, permanency, and promote well-being. With the passage of the 2018 Family First Prevention Services Act (FFPSA), a greater emphasis has been placed on family preservation by focusing service provision efforts on least restrictive methods of support for families at risk (Wu et al., 2023). According to the New Mexico child welfare policy, family preservation requires the implementation of policies supporting intact, functional families through the promotion of "well-paying, stable jobs" and housing supports that help "stabilize neighborhoods and strengthen communities," so that families can "provide for the basic needs of their children, including health, education, food, clothing, and shelter" (NM Stat § 40-15-3 (2021). Therefore, child welfare policy explicitly acknowledges the indirect role of the broader socio-ecological context in explaining the complex interrelationship between family-level risks and the immediate setting in which families operate. The risk assessment becomes a moderator for case disposition where families with higher risk scores are provided with agency and community resources intended to mitigate subsequent child welfare involvement (Children Youth & Families, 2023). Based on the findings of the present study, these supports may include access to transportation, secure and stable housing, and services and supports for persons with disabilities.

In New Mexico, there is substantial variability in level of socioeconomic vulnerability across counties. For example, Los Alamos County is the least socioeconomically vulnerable county with the lowest share of people of color; on the other hand, McKinley County is the most vulnerable: more than one-third of households live under the poverty line and about one in four adults have no High School diploma and/or live in a mobile home (see Supp Table 2). Disparities in county-level structural vulnerability and their impact on decision-making processes are factors that are outside the individual's control to redress. Taken together, children and families at risk may remain underserved, overburdened, or face ongoing monitoring due to agency decisions based on assessed safety or risk even though the reasons they are at risk to begin with has more to do with the unavailability of resources imperative for caregivers to meet the basic needs of their children (English et al., 2002; Fluke et al., 2002). On the other hand, families categorized as low risk, who may have service needs, might not receive sufficient service provision when referred to preventive or supportive family services.

In 2020, New Mexico introduced a structured decision-making tool to help caseworkers better determine how cases should be opened, investigated, and resolved (Lyman, 2019). The structured decision-making approach utilized in New Mexico and across the U.S. integrates both "predictive" and "contextual" assessment processes in conjunction with a structured needs assessment (Mendoza et al., 2016; Shlonsky & Wagner, 2005). We must evaluate the effectiveness of risk assessment algorithms in light of the findings of this study and the current state of knowledge. First, a report by the U.S. Department of Health and Human Services (ACF, 2017)

identified multiple barriers to services in New Mexico including a lack of mental health services (counseling and substance treatment), disruptions of services due to turnover of providers, and disparities in available services across counties (i.e., county lack of transportation for clients to access service providers). Furthermore, the report denoted a lack of services for substance abuse concerns, Spanish-speaking families, as well as individuals with low cognitive functioning and/or developmental delays. Moreover, the individuals who most need services often reside in communities lacking mental health care or affordable housing. They may face discrimination based on their sexual/gender identity or race/ethnicity, and/or struggle to find providers capable of effectively addressing their complex needs (Kennedy et al., 2024). Considering the above, the use of structured decision-making based on statistical or probabilistic models to guide the initial screening and investigation may not achieve the desired result of more equitable decision making to improve outcomes for vulnerable children (New Mexico Children, Youth and Families Department, 2020; Semanchin Jones, 2015; Shlonsky & Wagner, 2005). Rather, the role of political and socioeconomic disempowerment characterizing CPS-involved families (Merritt, 2020; Roberts, 2009) and the policy landscapes that have resulted in inequitable treatment and marginalization could be more relevant for understanding differences in intervention types and their role in reducing child maltreatment recurrence.

Limitations and Strengths of the Current Study

Our study highlighted the characteristics associated with potentially differential outcomes among families with similar case characteristics on the basis of the county in which that family resides. However, there are several limitations in our study that warrant attention in subsequent research. First, we did not incorporate all the factors that the DME framework predicts will explain CPS decision-making, such as agency level factors. The inclusion of agency-level characteristics may help explain more of the variability in intervention outcomes across counties due factors that are unique to the decision *maker*. In this study we used data spanning a 9-year period that ended in 2015. Since then, changes in both state policy and county factors, such as the implementation of structured decision-making and differential response, were not considerations here. Relatedly, we have no information about the types of service providers available in each county or factors that went into the determination of risk. Our sample included only children who were screened in and substantiated and hence children who were screened out or not substantiated were excluded from our analysis although some of these children may have been referred to diverse services. Finally, our findings are not generalizable to other states, particularly given the unique demographic profile in New Mexico in which most counties are "majority-minority," in other words,

the White population comprises only a plurality of the population.

Conclusion

Case- or intra-county- level factors do not exclusively explain the substantial variability in service provision observed in this study. Rather, there is substantial evidence that intervention disposition pathways vary across counties and further that the risk assessments conducted at the initial investigation impact case disposition outcomes differently across counties. To ensure equitable outcomes for children and families, decision-making based on risk and safety assessments must applied consistently across administrative units (i.e., counties). Future research must continue to incorporate additional information about providers, such as caseworkers' prior training and potential biases, as well as agency values, norms, and resources to ensure equitable service allocation decisions are made for children and families.

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Supplemental Material

Supplemental material for this article is available online.

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