



Working Paper:

How safe are early childhood education programs? New evidence from the universe of all licensed centers in North Carolina

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The reauthorization of the Child Care Development Block Grant (CCDBG) in 2014 emphasized the need to ensure better safety across the diverse landscape of early childhood education (ECE) programs. Media accounts highlight incidents where young children are injured or die in ECE settings. But aside from these egregious incidents, we know little about the extent to which ECE programs meet states' safety guidelines. To fill this gap, the present study applied data scraping techniques to compile a novel dataset that tracks all violations observed from the full universe of licensed, center-based ECE programs in North Carolina (N = 4,314). We used these data to examine the statewide frequency, regulatory category, and severity of safety violations observed during routine, unannounced licensing inspections of programs. We find that most programs had at least one violation when inspected, and a third of the programs had one or more severe violations observed. We also find that relative to publicly-operated programs such as Head Start or state pre-kindergarten, private programs were about 10 percentage points more likely to have safety violations, even when comparing programs within the same communities.

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Most young children in the United States regularly attend early childhood education (ECE) programs (Barnett et al., 2017; Laughlin, 2013). Although enrollment has increased steadily over the past few decades, particularly in publicly-operated programs, research suggests that the *quality* of many ECE programs is low to mediocre and unlikely to provide the conditions necessary to best support young children’s cognitive and social-emotional development (Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Magnuson, Meyers, Ruhm, & Waldfogel, 2004; Yoshikawa et al., 2013).

Not only do many programs fall short in creating the kind of environments needed to optimally support young children’s development, some programs may not even provide environments that ensure children’s basic safety. The popular press oftentimes publicizes ECE programs that are particularly dangerous, highlighting programs that violate basic safety and health standards and describing incidents involving young children sustaining injuries and, at the extreme, fatalities while enrolled at an ECE programs (Gross & Fox, 2018; Kennedy, 2017; Kovner, 2017; Wilson, 2018). These media accounts likely highlight the most egregious cases; however, the limited research examining safety more broadly in ECE programs also suggests reason for concern. For instance, a recent audit study indicates that during unannounced visits to 227 ECE programs in nine states, nearly all (96%) had one or more instances of potentially hazardous conditions and noncompliance with state safety and health requirements (U.S. Department of Health and Human Services, 2011).

In response to concerns about ECE program safety, policymakers have sought out new approaches to ensure young children’s well-being while they are in these settings. The most notable example is Congress’ 2014 reauthorization of the Child Care and Development Block Grant (CCDBG)—the first reauthorization since 1996. The reauthorization addressed program

safety in a number of ways. First, the legislation included new requirements such as lower adult-child ratios, comprehensive background checks, and first aid and CPR trainings. In addition, the legislation required that *all* programs receiving CCDBG funds—including center and home-based providers that were previously exempt—be inspected regularly to monitor compliance with safety and health guidelines (Matthews, Schulman, Vogtman, Johnson-Staub, & Blank, 2015). Finally, because parents often struggle to assess the safety and quality of ECE programs (Bassok, Markowitz, Player, & Zagardo, 2018; Hofferth & Chaplin, 1998), the CCDBG reauthorization required states to make licensing information easier to access. Subsequently, in 2017, more than half of states passed new legislation relating to ECE programs, with many of these new requirements related to safety, including mandates for background checks, routine inspections, and policies for safe sleep arrangements for infants (National Conference of State Legislatures, 2017).

Given increasing public concern about the safety of ECE programs and numerous public investments in regulatory approaches to safety improvements, it is surprising how little empirical evidence exists about the extent to which ECE programs *currently* meet basic safety guidelines. All states monitor safety at licensed ECE programs, and the data from these inspections could offer a unique opportunity to examine safety in ECE programs comprehensively. Unfortunately, despite the ubiquity of safety inspections, programs' inspection results have rarely been analyzed due to difficulty in accessibility (e.g., databases that are difficult to access and navigate).

This study makes three important contributions. First, we use state administrative data to provide new insights about the frequency, category, and severity of safety violations that occurred in *all* licensed ECE programs in North Carolina. As far as we know, this is the first study that explores the distribution of safety violations for the universe of ECE programs in a

single state. Second, we examine whether safety violations vary by different sectors of ECE programs (independently-run programs, as well as publicly-operated programs such as Head Start and state pre-kindergarten). This has the potential to provide important information about where policy-makers should focus their attention on improving childcare safety. Third, we apply a state-of-the-art method for collecting information about programs' safety records using data scraping techniques, which may be a useful tool for compiling regulation data in other states and areas of ECE.

Background

A large number of recent federal and state policies have focused on improving the quality of ECE programs (Barnett et al., 2017; Congressional Research Service, 2016). Many of these efforts—including the federal Race to the Top Early Learning Challenge Grant and states' rapid rollouts of early childhood accountability systems called Quality Rating and Improvement Systems—created incentives for ECE programs to provide higher-quality, more engaging learning environments. Recent policies have encouraged the use of developmentally appropriate curricula, the measurement of teacher-child interactions, and the provision of coaching and other professional development supports (Hamre, Partee, & Mulcahy, 2017; Hulseley et al., 2011; Jenkins, 2014; Jenkins, Auger, Nguyen, & Yu, 2016; Sheridan, Edwards, Marvin, & Knoche, 2009). All these pieces, while critical, assume that ECE programs meet a basic level of safety, and build on that basic foundation. In this section we provide an overview of how states aim to ensure basic *safety* in ECE programs, and of the existing evidence on the prevalence of unsafe environments.

Monitoring as a Strategy for Ensuring Safety and Health in ECE Programs

Each state sets guidelines that stipulate the lowest acceptable standards under which an ECE provider can operate. The purpose of such standards is to minimize the risks children face in ECE programs (Payne, 2011). Generally, these standards provide guidance on indoor and outdoor safety, nutrition and hygiene, criminal background checks, and other behaviors that may potentially threaten children's welfare.

ECE programs must be licensed, and as part of this process, programs are inspected regularly by the state to ensure they are compliant with regulations. Violations to these standards are cited in programs' inspection reports, which enumerate a brief description of each observed violation. Programs then have the opportunity to correct violations cited in their inspections; for programs that accumulate numerous violations or receive serious violations, the state may take administrative actions, such as closing down the program. Inspection reports are publicly available for a set number of years; parents can access these records as they evaluate individual ECE programs, typically via an online search portal designed by the state.

States determine their own licensing requirements for ECE programs, and they vary significantly with respect to both regulation stringency and the types of programs that need to be regulated (Matthews et al., 2015). For instance, prior to 2014, nearly every state had an existing policy of visiting center-based programs prior to issuance of a license, but only 40 states routinely conducted unannounced inspections of licensed center-based programs, and only 15 states had policies for conducting *comprehensive* background checks for all employees in center-based programs (Matthews et al., 2015). Child-staff ratios can vary across states from 3:1 to 6:1 for infants, 4:1 to 12:1 for toddlers, and 8:1 to 20:1 for preschool-aged children (U.S. Department of Health and Human Services, 2013).

States also differ with respect to whether their state pre-kindergarten programs and federal Head Start programs are included within their licensing system. In either case, these *publicly-operated* ECE programs, typically face far more stringent requirements than do privately run child care centers. For example, the majority of state-funded pre-k programs required a minimum of a Bachelor's degree for their lead teachers (Barnett et al., 2017), and Head Start legislation required that at least 50% of Head Start teachers nationwide hold a Bachelor's degree as well (Bassok, 2013). In contrast, prior to the CCDBG reauthorization, only 18 states required lead teachers in privately-operated ECE programs to have more than a high school diploma, and only one state required teachers to hold a Bachelor's degree (Bornfreund, Cook, Lieberman, & Loewenberg, 2015).

Safety in Early Childhood Programs

Little research has examined the extent to which programs adhere to their state's ECE licensing regulations. Rather, much of the existing evidence about safety in ECE programs has focused less on tracking compliance with safety guidelines, instead focusing on the frequency of undesirable incidents that could stem from unsafe conditions (e.g., injuries). At the extreme, research has shown that fatalities in ECE programs are quite rare, especially at center-based programs (Moon, Patel, & Shaefer, 2000; Wrigley & Dreby, 2005). Much of this evidence comes from systematic analyses of court cases, national media headlines, and state databases tracking infant mortalities (Moon et al., 2000). Minor, unintentional injuries appear to make up the majority of incidents in ECE programs (Hashikawa, Newton, Cunningham, & Stevens, 2015), most of which are described as having been predictable and preventable (Hashikawa et al., 2015).

The few studies that have focused on the extent to which ECE programs comply with safety regulations have typically relied on survey data, in which ECE providers were contacted and asked questions about their safety and health practices (Browning, Runyan, & Kotch, 1996; Kotch et al., 1997; Kotch, Hussey, & Carter, 2003). These survey-based studies suffer from low response rates, raising concerns about generalizability. Further, the self-reported responses likely underestimate the true prevalence of safety hazards in these programs.

The lack of more recent evidence on the prevalence of safety violations in ECE programs is surprising given that all states license and monitor ECE programs and collect data on the extent to which programs are in compliance with states' safety and health guidelines. To date, however, virtually no studies have leveraged these state-collected data. Two recent studies from Connecticut are a notable exception. These two studies leverage administrative data to examine the prevalence of various types of violations in both center-based (Crowley, Jeon, & Rosenthal, 2013) and home-based (Rosenthal, Jeon, & Crowley, 2016) ECE programs. For example, Crowley and colleagues (2013) found the greatest noncompliance among center-based ECE programs to indoor and outdoor safety regulations: 48.4% of centers had at least one violation related to playground hazards, and 38.2% of centers were noncompliant with maintaining a hazard-free, indoor setting. However, while informative, these studies leave many questions unanswered both about the severity of the violations and the program characteristics that may be related to safety violations.

Differences in safety levels across contexts. Even less is known about the extent to which safety risks vary across different types of ECE programs. The existing research has highlighted striking differences in safety between center- and home-based ECE programs (Moon et al., 2000; Wrigley & Dreby, 2005). For example, Wrigley and Dreby (2005) found that

although fatalities are generally quite rare, these extreme incidents occurred much less frequently in center-based programs relative to home-based programs. The authors posited that the organizational structure and regulations found in center-based ECE programs, which are often lacking or less stringent in home-based programs, may play a role in protecting children from safety risks, at least with respect to more extreme instances such as fatalities. The general pattern of higher levels of safety in center-based programs relative to home-based programs was echoed by Bassok, Fitzpatrick, Greenberg, and Loeb (2016), who focused on much less extreme safety measures. For instance, center-based programs were about 10 percentage points more likely than home-based programs to have a first aid kit available and were also 27 percentage points more likely than home-based programs to have all electrical outlets covered.

While the existing evidence suggests important differences in safety between home- and center-based programs, these studies are limited in that they focus on a very small set of safety issues and do little to consider heterogeneity *within* the sector of center-based programs. The second issue is problematic given the large differences in regulation across the three main types of center-based programs (Head Start, state pre-kindergarten and child care), and the growing body of research demonstrating significant differences in program quality across different types of programs (Bassok, Hamre, Markowitz, & Sadowski, 2018; Dowsett, Huston, Imes, & Gennetian, 2008; Johnson, Ryan, & Brooks-Gunn, 2012). For example, using nationally representative data, Bassok and colleagues (2016) find that relative to private child care centers, publicly-operated programs such as Head Start and pre-kindergarten had lower levels of teacher turnover, more literacy and math activities, more learning materials, and higher ratings on an observational measure of quality. Taken together, the existing evidence suggests that more highly-regulated and well-funded programs are more likely to offer program features that are

linked positively to child development. No studies we are aware of have tracked whether there are differences in the more foundational issue of program safety between publicly- and privately-operated programs.

Present Study

This study uses detailed safety data collected through routinely-conducted licensing inspections in North Carolina to provide the first state-level analysis of safety violations in *all* licensed ECE programs within a state. We begin by describing the frequency and severity of safety violations in center-based ECE programs. We then explore the extent to which safety varies across types of ECE programs comparing publicly-operated programs (i.e., Head Start and state pre-k) with privately-operated ones. We hypothesized that the more stringent regulations that publicly-operated programs face, and the higher levels of funding they receive, would lead to higher levels of safety.

Our descriptive analysis improves on prior research about safety in ECE programs in that it includes the full universe of licensed ECE programs and provides detailed information about the categories and severity of violations observed. In addition, the study highlights the potential use of licensing data, which are available in all states, as an informative but under-utilized tool for understanding issues of access and quality in ECE.

Method

Data and Sample

The Department of Health and Human Services oversees licensure for ECE in the state of North Carolina. According to North Carolina law, any provider that serves more than two nonrelative children for more than four hours a day must operate under a license. We limit our current analysis to *child care centers* (i.e., center-based ECE programs), which are defined by the

state as programs serving nine or more children. The *child care center* license type can include private and independently run programs, federally-funded Head Start, and state-funded preschool (NC Pre-K).¹ As discussed further below, these programs face varying requirements as a result of different funding streams, regulatory structures and program goals. However, they must all meet the same set of *minimally enforceable* safety guidelines as required by the state’s licensing system.

Within the Department of Health and Human Services, the Division of Child Development and Early Education (DCDEE) is responsible for conducting annual inspections to ensure all licensed ECE programs are complying with regulations. DCDEE staff inspect ECE programs using a rubric with items such as building space and staff-child ratios, discipline, safety and health, and recordkeeping. Each individual violation is assigned a 1-6 rating—a measure of the severity of the threat to children’s health and welfare, should violations to these items occur.

We constructed a cross-sectional dataset that includes all licensed, center-based ECE programs in North Carolina. The DCDEE hosts a unique website for each licensed, currently operational ECE program, where parents can find detailed information on a number of program-level characteristics, such as the program’s location and license type. In addition, these websites include reports from every safety inspection conducted at each program over the past three years. These inspection reports include information such as inspection date, violations observed (if any), and whether violations were corrected.

Our study includes any operational, licensed, center-based ECE program in North Carolina that had received at least one annual, unannounced inspection before January 1, 2016.

¹ Due to state licensing exemptions, religiously-affiliated ECE programs are excluded from the analysis. Our study sample also excludes small group care run in a family home (eight children or fewer; “family child care homes”), as these programs operate under a different license type in North Carolina (and therefore, are subject to different state regulations than child care centers).

We limited the analysis to programs' most recent annual, unannounced inspection (i.e., violations observed during these inspections occurred in 2015), which provided a recent snapshot of safety in licensed ECE programs. This resulted in an analytic sample comprising 4,314 programs.

Measures

Publicly- and privately-operated ECE programs. Although all licensed programs are required to maintain compliance with safety standards, in North Carolina, and other states, *publicly-operated programs* such as Head Start and North Carolina's state-funded pre-k program, NC Pre-K, must meet additional requirements that are tied to their respective funding structures. For instance, Head Start programs—which aim to deliver comprehensive services such as education, health, care, and support to their enrolled children and their families—are required to meet the Head Start Program Performance Standards in order to receive federal funds (Department of Health and Human Services, 2016). These standards are designed to support ongoing, effective delivery of high-quality services, and include requirements about the use of professional development and use of program administrative data to inform continuous improvement.

Similarly, NC Pre-K programs, which were designed to enhance the school readiness of four-year-old children with at least one identifiable risk factor such as poverty or developmental disability, are required to meet a number of state requirements that focus on (1) approaches to learning, (2) emotional and social development, (3) health and physical development, (4) language development and communication, and (5) cognitive development (North Carolina Division of Child Development and Early Education, 2018). NC Pre-K programs are required to

serve children for a minimum of 6.5 hours per day for 10 months per school calendar year, and employees are required to participate in ongoing professional development.

The DCDEE indicates whether a licensed program serves children using Head Start or NC Pre-K funds. We defined a “public” program as any program that was denoted as providing Head Start and NC Pre-K. In contrast, programs that were not denoted as serving children using funds from either of these sources were classified as private or independently-operated.² More than a quarter of programs in our analytic sample were classified as publicly-operated.

Safety violation measures. The DCDEE inspects all ECE programs at least once annually to ensure compliance with licensing regulations. Programs are assessed on a rubric which includes 605 specific regulations split across 25 categories.³ Table 1 provides examples of specific violations within each category, and highlights their state-designated severity.⁴ Items were assigned points valued from one to six, where six-point items represented the most severe violations and the ones deemed to pose the greatest threat to the safety and health of children (Division of Child Development, n.d.). Within categories, items can vary in severity. For instance, within the violation category ‘Required Caregiving Activities,’ an example of a violation with low severity is *‘The center had not developed and adopted a written safe sleep policy,’* while a violation from the same category but with higher severity is *‘Each child was not attended to in a nurturing and appropriate manner, or in keeping with the child’s developmental needs.’* Some categories of violations only include items rated highly for severity. For instance,

² Although we describe independently-operated programs as “Private” programs, it is important to note that these programs may still accept public funds through child care subsidies.

³ In the present study, we collapse the violations into 15 categories (see Table 1). The full rubric used in licensing inspections are available from the authors upon request (North Carolina Division of Child Development and Early Education, n.d.), and include the complete list of violations.

⁴ Of the 605 unique items, 39 (6.4%) appear in more than one category. These violations constituted 4.0% of all violations observed in the data. To avoid double counting, undergraduate research assistants were asked to select the category that was most relevant, based on the descriptive text of the violation. Findings in the current study are not sensitive to those coding decisions.

all items in the ‘Discipline’ category are rated a ‘6’ and they include violations such as ‘*Corporal punishment was used,*’ ‘*Child was handled roughly,*’ and ‘*Child was put in locked confinement.*’ Other categories, such as ‘Nutrition,’ include violations that were ranked at much lower severity levels. For instance, ‘*Menus for all meals and snacks were not planned at least 1 week ahead and dated,*’ and ‘*Foods with little or no nutritional value were available often and not just for special occasions,*’ both received a severity rating of ‘2.’

We examined two measures of violation occurrence: an indicator for *whether* at least one violation was observed during a program’s most recent inspection (“prevalence”) and the total number of violations a program received (“frequency”). We then disaggregated the violation data by category, computing a series of indicator variables for whether a program received at least one violation of a given regulatory category. Last, we considered two measures of violation severity, analogous to violation frequency: whether a program received at least one severe violation, and the total number of severe violations a program received. In the present study, ‘severe’ violations were defined as violations assigned either five or six points.

Community characteristics. Recent evidence suggests that patterns of safety violations may vary systematically by community measures of poverty. For example, family child care homes in zip codes with lower median household income were more likely to be noncompliant (relative to programs in higher income areas) with state safety and health standards (Rosenthal et al., 2016). Although no studies have examined the link between community characteristics and program safety among center-based programs, existing research does indicate differences in ECE program quality across communities (Bassok & Galdo, 2016; Gordon & Chase-Lansdale, 2001; Hatfield, Lower, Cassidy, & Faldowski, 2015; Valentino, 2018), with most research showing that families in higher income communities have greater access to high-quality ECE opportunities.

However, Hatfield and her colleagues (2015) found that publicly-funded programs, which are often found in the lowest-income communities, help mitigate the relationship between poverty and program quality.

We supplemented the program-level violation dataset with zip code tabulation area data from the U.S. Census Bureau 2015 American Community Survey five-year estimates, including percent of families in the zip code who are Black non-Hispanic, percent of families who are Hispanic, median household income, unemployment rate, and maternal labor rate. We include these covariates in our regression analyses to account for the possible relationship between community characteristics, program type, and program safety.

Program characteristics. Existing research has also demonstrated that the quality of ECE varies based on program characteristics, such as the age of children served (NICHD Early Child Care Research Network, 1996, 2000). For example, Bassok and colleagues (2016) found that the caregivers in formal programs serving two-year-olds had a higher rate of turnover, and were 35 percentage points less likely to hold a degree in early childhood education. Notably, program characteristics tend to systematically vary between publicly- and privately-administered programs. For instance, relatively few publicly-provided ECE programs serve infants and toddlers or provide care outside normal business hours. To account for the potential correlation between program characteristics, type, and safety, we include these characteristics in our regression analyses. Specifically, we account for whether a program is licensed to provide evening or overnight care, whether a program is licensed to serve infants and toddlers (i.e., children aged two and under), and a continuous measure of a program's maximum capacity, as approved by the state. Including these measures in our regressions allows us to test whether gaps

in safety between publicly- and privately-operated programs are eliminated when accounting for key program characteristics.

Analytic Strategy

We “scraped” violation data from individual programs’ websites using R version 3.3.0 (R Core Team, 2016). This procedure involved the following steps. First, we used the DCDEE’s search portal to populate a full listing of all operational ECE programs in North Carolina. Second, we extracted the license numbers—a unique identifier—associated with each ECE program from the HTML underlying the search results page. Because the URL associated with each programs’ website differed only in license number, we then created a loop that (1) visited each programs’ website, extracting the underlying HTML using the `readLines` command in the ‘base’ R package; (2) used string functions in base R to search and extract program information and other data stored on programs’ websites; and (3) compiled information on the inspections received by each program. Finally, in a similar process, we looped across individual inspection reports and extracted the text of each observed violation; we later merged information from the state inspection rubric, so that each observed violation was associated with a violation category and severity level.

Using these data, we calculated descriptive statistics to document violation frequency, category, and severity. The aim of these analyses was to understand the nature of violations observed in routine inspections. We then aggregated these violations to the program level to understand the extent to which observed violations were concentrated or distributed across programs in North Carolina.

Finally, to examine whether the prevalence of violations differed across program type, we compared publicly- and privately-operated programs with respect to the likelihood of receiving

violations. Specifically, we conducted a series of linear probability models⁵ (LPM) with the following specification:

$$Y_{ij} = \alpha + \beta_1 Private_{ij} + \epsilon_{ij}$$

where *Private* = 1 if program *i* in zip code *j* was independently run (i.e., not a publicly-operated program such as Head Start or NC Pre-K), and ϵ_{ij} represents program-level residuals clustered at the zip code level.⁶ β_1 is the coefficient of interest and indicates that a privately-operated program was β_1 percentage points more likely than a publicly-operated program to receive a violation of a given category (the dichotomous outcome, *Y*). While these unadjusted group mean differences are easy to interpret, they do not account for the presence of other community characteristics, or for other program characteristics, that may be associated with both program type and the various measures of program safety. For example, publicly-operated programs are often targeted, in that they serve communities with more low-income and minority families, which could influence the differences by program type we estimated in the equation above. For this reason, we examine the sensitivity of our findings to alternative model specifications, including a number of covariate-adjusted models and a model that includes zip code fixed effects.

Results

The first aim of the paper was to understand the nature of observed violations across the entire ECE landscape. Figure 1 presents the distribution of all violations by both severity and category. In total, we observed 11,410 violations, of which 2,072 (18.2%) were classified as

⁵ Because our outcome of interest is dichotomous, we also considered logistic regressions. In this paper, we present LPM results as our main specification, as they are easiest to interpret. The estimates do not meaningfully differ in interpretation from those estimated from the logit model.

⁶ When examining violation frequency by violation category, we conducted seemingly unrelated regressions, which is more efficient relative to conducting separate regressions when the dependent variables are correlated (Hartung & Knapp, 2005).

severe. ‘Recordkeeping’ violations—which indicated a lack of oversight in maintaining records relating to children, staff, or the program—were by far the most frequently observed type of violation (43.9%). Overall, the most frequently observed violation was ‘*All staff did not have an annual medical statement or health questionnaire on file,*’ which was classified as not severe (i.e., one point) and made up 6.1% of all violations observed. Other relatively common ‘Recordkeeping’ violations included ‘*Each employee’s personnel file did not contain an annual staff evaluation and a staff development plan,*’ ‘*Monthly playground inspections were not completed,*’ and ‘*Complete record of monthly fire drills showing the date, time, length of time to evacuate, and signature was not maintained.*’⁷

After ‘Recordkeeping,’ the next most common category of violations was ‘General Safety and Health,’ which accounted for 14.1% of all violations. Unlike ‘Recordkeeping,’ however, a nontrivial percentage (44.5%) of these ‘General Safety and Health’ violations were classified as severe. The most common example was ‘*All hazardous items and those products in aerosol dispensing cans were not stored in a locked room or cabinet,*’ which made up 3.1% of all violations and was also the third most frequently observed violation in the data.

Other categories with significant proportions of severe violations include ‘Medication’ (e.g., ‘*Parent’s medication authorization did not include required information*’) and ‘Adequate Space’ (e.g., ‘*Minimum staff/child ratios and group sizes for the number and ages of children in care were not met*’). Although ‘Supervision,’ ‘Staff Credential Requirements,’ and ‘Discipline’ consisted entirely of severe violations by definition (see Table 1), they were infrequently observed in the data. In particular, only one ‘Discipline’ violation was observed in the data.

⁷ In Appendix A we present the 20 most common violations observed in our data.

Program-Level Safety

On average, programs received 2.7 violations, though there was considerable skew in this distribution: the median number of violations observed in an inspection was two, yet some programs received as many as 24 violations. The median program received no severe violations, though the maximum number of violations a single program received was six.

Table 2 presents the percent of programs that exhibited violations, disaggregated by severity and category. Despite the positive skew described above, these results suggest that violations are prevalent across ECE programs: just over 70 percent of all programs had at least one violation. Almost half of all programs experienced at least one ‘Recordkeeping’ violation. The prevalence of other categories of violations generally follow the patterns described at the violation-level, with the most notable categories including ‘General Safety and Health’ (27.5% of programs), ‘Required Caregiving Activities’ (16.5%), and ‘Medication’ (14.0%). Though notably fewer in number, severe violations occurred in just under a third of programs, and 15.0 percent of programs received a severe violation related to ‘General Safety and Health.’

Heterogeneity across Program Types

The second aim of our paper was to understand whether the likelihood of safety violations differed between publicly- and privately-operated programs. In the following sections, we focus on prevalence (whether a program received any violations) and severity (whether a program received at least one severe violation) measures.

Figure 2 highlights the unadjusted group mean difference in these two measures between publicly- and privately-operated programs. Relative to publicly-operated programs, privately-operated programs were 11.4 percentage points more likely to have any violation, and 8.4 percentage points more likely than publicly-operated programs to receive a severe violation. In

Table 3, we show that this pattern of difference between publicly- and privately-operated programs is statistically significant at the 1% level for the majority of regulation categories. For example, relative to publicly-operated programs, privately-operated programs were 6.7 percentage points more likely to receive ‘Medication’ violations and 8.1 percentage points more likely to receive a violation related to ‘Required Caregiving Activities.’

These raw gaps may be explained in part by systematic differences in the communities in which programs operate or the services they provide. In North Carolina, publicly- and privately-operated programs systematically differed on a number of characteristics. As shown in Table 4, privately-operated programs were more likely to be licensed to provide evening or overnight care, and more likely to be licensed to serve infants and toddlers. Publicly-operated programs were more likely to be located in communities with greater proportions of Black and Hispanic families residing, as well as in areas with greater community poverty. Table 5 shows results from regression analyses in which we explore the extent to which the raw differences in violations across program types are explained by accounting for program- and community-level characteristics. Column 1 of the table replicates the raw gaps in violations that were highlighted in Figure 2.⁸ In Column 2 we control for zip code level characteristics and in Column 3 we include zip code fixed effects. Our coefficient of interest is only modestly sensitive to these efforts to account for community characteristics. In other words, even within the same zip codes, privately-operated programs have are about 10 percentage points more likely to have a safety violation, and over six percentage points more likely to have a severe violation.

⁸ Although the model is the same, Figure 2 describes group mean differences across the entire sample; the sample in Table 5 is restricted to be consistent across all models tested, and thus excludes 63 programs that did not have available geographic information.

In Column 4 we add program-level characteristics. Accounting for these characteristics explains a significant portion of the public-private difference. While substantially reduced in magnitude, the differential between publicly- and privately-operated programs seems to persist for the prevalence of violations in general, even after taking into consideration program characteristics, and even when comparing programs within the same zip code (Column 5). In contrast, there is no longer a statistically significant difference with respect to the likelihood of a severe violation.

Discussion

Most parents of young children indicate that a “clean and safe” environment is extremely important to them when finding ECE programs for their children (Bassok, Magouirk, Markowitz, & Player, 2018). Unfortunately, research suggests that parents are unable to accurately evaluate the quality and safety of ECE programs, even after their child has attended the program for months (Barros & Leal, 2015; Bassok, Markowitz, et al., 2018; Cryer & Burchinal, 1997; Cryer, Tietze, & Wessels, 2002). Licensing and routine inspections are the primary policy levers available today to ensure ECE program safety on behalf of families (Blau, 2007; Hofferth & Chaplin, 1998; Hotz & Xiao, 2011; Payne, 2011; Schochet, 2017). However, despite existing regulations, safety violations in ECE programs are common (U.S. Department of Health and Human Services, 2011).

In response, policymakers aiming to ensure the safety and health of children in ECE have introduced more stringent regulations and required more programs to comply, including home-based ECE programs and centers previously exempted (Matthews et al., 2015). Despite the inherent importance of ECE safety, and the increased public investment in regulatory approaches

to ensuring this safety, surprisingly little research has documented the extent to which unsafe conditions typically arise in ECE programs.

This lack of understanding about the prevalence and severity of safety violations in ECE programs is problematic. Parents and families wish to better understand the risks their children may face in ECE programs. Media accounts tend to focus on the most devastating and severe safety violations, and may leave families with an inaccurate sense of the prevalence of such incidents. Policymakers are advocating for new strategies to improve safety and have an interest in understanding the returns on their investments. Especially as states begin to implement revised policies in response to the CCDBG reauthorization, there is a real need to understand whether or not these efforts have led to drops in safety risks and undesirable incidents. Documenting the “baseline” levels of safety in ECE settings system-wide is an essential first step towards that goal, and one that the current study aimed to take.

Our work builds on a small existing literature on ECE program safety in several important ways. First, our use of data scraping techniques allows us to describe safety and health violations across the full universe of operating ECE programs in North Carolina, providing the first statewide exploration of this topic. The scope of our study allows us to overcome a number of challenges faced by previous work that relied on surveys, including low response rates, non-random selection, and measurement error from self-reported survey responses (Browning et al., 1996; Hashikawa et al., 2015). Second, North Carolina’s inspection rubric and their data are incredibly detailed, allowing us to explore, for the first time, variation in the category and *severity* of observed violations. Finally, our work is the first to assess whether safety and health violations occur less frequently in programs that are publicly-operated.

Our findings suggest that *some* non-compliance with safety regulations is commonplace among licensed ECE programs in North Carolina: more than 70% of programs had at least one violation. However, not all violations are created equal, and our results show great variation depending on the category and severity of the violations considered. While just under half of ECE programs had at least one violation from the ‘Recordkeeping’ category, violations related to ‘Sanitation,’ ‘Adequate Space,’ ‘Supervision,’ or ‘Discipline’ were much less common (the likelihood of observing at least one violation in these categories ranged from 6.8 percent of programs to less than one percent).

Our results also indicate that the violations that pose the greatest immediate risk to children occur less frequently. Just under a third of programs received a violation that was considered severe, which was defined as a rating of five or six on a 6-point scale. That said, five of the top 20 most common violations were rated a five for severity. These related to the safe storage of potentially hazardous materials and the ways in which programs handled and stored children’s medications.

Whether or not the frequency and severity of safety violations observed in North Carolina is “too high” is, in part, a subjective question. Some amount of noncompliance is to be expected, especially given that over 600 individual regulations were measured. The median ECE program in North Carolina had two violations in their most recent inspection, and the median program did not receive any violations that were categorized as severe. At the same time, we observed programs with over 20 violations, with multiple severe issues. These rare but problematic cases are worthy of further investigation.

In addition to documenting the frequency and severity of safety issues, our study is the first we are aware of to examine whether safety concerns vary between publicly- and privately-

operated programs. Existing studies do demonstrate notable differences in safety between home-based and center-based programs (Moon et al., 2000; Wrigley & Dreby, 2005). Those differences are perhaps unsurprising given that the licensing requirements for center-based programs are, in most cases, substantially more stringent. Analogously, we hypothesized that publicly-operated ECE programs, which face a host of additional requirements over and above licensing regulations, would provide safer environments for children. We note, however, that publicly- and privately-operated programs in North Carolina do face the same basic safety regulations, and the extra requirements faced by Head Start and state pre-kindergarten programs are often focused less directly on ensuring safety and health and more on ensuring children's development and learning. Thus, unlike differences between home- and center-based programs, it is not necessarily obvious that differences between program types but within center-based programs should result in publicly-operated programs being safer.

Our results indicate that, relative to privately-operated programs, publicly-operated programs were roughly 10 percentage points less likely to receive a violation or a severe violation. These patterns are aligned with our hypothesis that the higher requirements faced by publicly-operated programs, as well as the heightened funding these programs receive, might translate to safer environments.

Community characteristics, such as median family income, are correlated with the prevalence of publicly-operated programs since these programs are oftentimes targeted to at-risk children. For this reason, and because community characteristics may also be correlated with program safety, we ran models that accounted for these factors either with controls or through zip code fixed effects. Our findings were not sensitive to the inclusion of these measures.

On the other hand, accounting for specific program-level covariates, particularly whether or not the program was licensed to serve infants and toddlers, did explain away a substantial portion of the gap in safety levels between public and private programs. In other words, programs licensed to serve the youngest children are more likely to have safety violations, and they are also more likely to be privately- rather than publicly-operated. In our most conservative models—which leverage within-zip code variation and include controls for program characteristics—we still find that privately-operated programs are about 4 percentage points more likely to receive a violation, though we no longer observe differences across program types in the likelihood of a severe violation. Nevertheless, the fact that safety differences persist for children living in the same communities is notable. Greater attention to the safety of children in privately-operated programs, particularly to the very youngest children attending these programs, may be warranted.

Limitations

The current study has several limitations. First, the study was exploratory and descriptive in nature. We sought only to describe variation in compliance with safety and health standards across North Carolina and to assess whether patterns differed across contexts. Our study did not examine the mechanism driving differences in safety between publicly- and privately-operated programs. One possibility is that the heightened requirements faced by publicly-operated programs help promote safety in ECE programs. For example, these programs require more highly educated teachers, and it may be the case that these teachers employ practices in the classroom that better ensure safety. Another potential explanation for these differences is that external regulatory systems faced by these publicly-operated programs function might function as a “check.” For example, it may be that public programs that are already receiving visits from

external agencies have more opportunities for feedback on features of the ECE program that improve children's learning, and in these improvement efforts programs may also be implementing changes that satisfy minimum licensing requirements. In contrast, the state's monitoring schedule may be the only regulatory system faced by privately-operated programs, which may have less external support or may have fewer opportunities to receive feedback prior to their inspection visits. Finally, it is possible that the differences are explained by factors other than regulation, such as higher levels of funding which may be used, in part, to create safer environments. Further research is needed to better understand the drivers of the differences observed in the current study.

Second, while considerable boons of this study were the data we analyzed and the methods we employed to compile the data, the data are imperfect measures of program safety, especially if program staff temporarily adjust their behaviors during the relatively brief inspection periods. Our results provide an accurate description of ECE safety as observed by DCDEE staff conducting the inspections, but could be supplemented with data about actual incidents of mishaps, injuries or fatalities, since these are ultimately the key outcomes of interest. Third, the data we examine come from just one state, and states likely vary both in levels of safety and in how safety is operationalized by state governments (see Crowley et al., 2013, for an example of another state context). Consequently, more work examining multiple state and regulatory contexts is needed to better understand statewide descriptions of safety.

Finally, while our results provide a recent snapshot of safety in ECE programs, our analysis is mechanically limited to operational programs. To the extent that the most unsafe programs are more likely to be shut down, our data may overestimate the safety of ECE in the state, as these closed programs may not be included in one snapshot of data. However, by

repeating these data scraping procedures repeatedly over time, researchers can track the prevalence of subsequent closures that are related to issues of program safety, and can help bound estimates of levels of across operational programs in the state.

Policy Implications & Future Directions

The CCDBG reauthorization placed a greater emphasis on formal standards and routine inspections as part of its effort to improve the quality and safety of the educational settings young children experience. As states begin to implement their proposed changes in response to the CCDBG reauthorization requirements, it will be essential for policymakers to assess whether these changes lead to meaningful improvements in safety.

The current study provides a “baseline” look at safety violations in a single state and a single point in time. It highlights the frequency and severity of safety violations and shows there are meaningful differences in these measures between publicly- and privately-operated programs. The same data scraping methods used in the present study to compile a snapshot of ECE program safety could also be leveraged to compile panel data that allow the tracking of programs and their safety over time. These types of data, when coupled with rigorous, quasi-experimental methods, would provide the tools necessary to understand the extent to which policies create *changes* in program practices that foster safety and health.

Our study highlights that data collected as part of ECE compliance efforts can also be used to answer timely, policy-relevant questions. Over the past decade, there has been a substantial increase in the systematic monitoring of safety and quality in ECE programs. The rapid expansion of Quality Rating and Improvement Systems (QRIS), which are early childhood accountability systems that seek to foster improvements at scale by assessing programs relative to a system-wide benchmark and providing incentives to encourage programs to improve their

quality, has led to much more program-level data about ECE programs nationwide (Zellman & Perlman, 2010). However, with few exceptions (Bassok, Dee, & Latham, 2017; Crowley et al., 2013; Rosenthal et al., 2016), the administrative data collected as part of these monitoring processes has been difficult to access and is underutilized by researchers. This is a missed opportunity.

Ideally, states would ensure data were more readily accessible, and efforts to move in that direction are essential. In the meantime, however, data scraping methods, like the ones used in the current study, offer researchers a tool for analyzing this information without burdening states to restructure their data and systems in ways that better suit analysis. This strategy provides a powerful way to leverage already-collected, public information to understand critical issues around the quality of care and education young children receive.

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Table 1
Summary of items from licensing inspection rubric

	Number of items	Range of severity			Sample items	
		Mean	Min	Max	Severity	Violation Description
Adequate space/staff:child ratios	28	6	6	6	6	Minimum staff/child ratios and group sizes for the number and ages of children in care were not met.
Building requirements	10	4.2	4	6	4	All indoor equipment and furnishings were not in good repair and in usable condition.
Required caregiving activities	78	3.56	1	6	6	Storage space was not available for each child's personal belongings.
					1	The center had not developed and adopted a written safe sleep policy.
Discipline	11	6	6	6	6	Each child was not attended to in a nurturing and appropriate manner, or in keeping with the child's developmental needs.
					6	Corporal punishment was used.
General safety and health	51	3.33	3	5	3	Electrical outlets not in use which were located in space used by children were not covered with safety plugs unless located behind furniture or equipment that cannot be moved by a child.
					5	Hazardous items, materials, and equipment were not used under adult supervision.
General licensing requirements	18	2.77	2	6	2	The operator made an effort to falsify information.
					6	The number of children present was not within permit capacity.
					5	Parent's medication authorization did not include required information.
Medication	13	5	5	5	5	Menus for meals and snacks were not current or posted where easily seen by parents.
Nutrition	34	2	2	2	2	Prior to supervising children on an aquatic activity, and annually, staff did not sign and date a statement that they had reviewed the center's policies on aquatic activities.
Other/Uncategorized	193	3.31	1	6	1	Children were not adequately supervised while participating in an aquatic activity.
					6	Children played outside the fenced area without parent's written permission.
Outdoor space requirements	19	4	3	6	3	Outdoor area was not designed so staff can see and easily supervise the entire area.
					6	All staff did not have an annual medical statement or health questionnaire on file.
Recordkeeping	101	1.86	1	5	1	There was not the required number of staff present who have successfully completed a basic first aid course within the last 3 years, or prior to training expiration date, whichever is less.
					5	Multi-use articles, including highchair feeding trays, were not washed, rinsed and sanitized after each use.
Sanitation	25	2.84	2	3	2	All walls and ceilings, including doors and windows, were not kept clean and in good repair.
					3	All group leaders were not at least 18 years of age and/or had not completed or were not enrolled in BSAC training.
Staff credential requirements	32	5	5	5	5	Children were not adequately supervised at all times.
Supervision	4	6	6	6	6	Emergency and identifying information was not in the vehicle for each child being transported.
Transportation	28	3.18	1	6	1	Children were left in a vehicle unattended by an adult.
					6	

Notes. This table presents the categories assessed in licensing inspections, the average and range of items within each category, and example items. Items presented in this table are intended to demonstrate the range of severity within a given category, and do not necessarily imply the violations were observed in our data. N is number of standards within a category. Only one example item is shown for categories with constant severity. 'Other' includes 'Annual Inspections' (n=3), 'Off-Premise Activities' (n=7), 'Enhanced Requirements' (n=37), 'Aquatic Activities' (n=10), caregiving for school-aged children (n=25) and special populations (n=106), and 'Miscellaneous' (n=5). Adapted from the North Carolina Division of Child Development and Early Education (n.d.), where the full list can be obtained.

Table 2.
Program-level descriptive statistics for violation measures

	% of programs with at least one of any violation	% of programs with at least one severe violation
All violations	70.86 [45.44]	31.76 [46.56]
<i>By violation category</i>		
Recordkeeping	48.75 [49.99]	2.62 [15.97]
General safety and health	27.45 [44.63]	15.02 [35.73]
Required caregiving activities	16.48 [37.11]	0.14 [3.73]
Medication	13.95 [34.66]	13.95 [34.66]
Other/Uncategorized	11.96 [32.45]	0.12 [3.40]
Nutrition	11.71 [32.15]	-
Outdoor space requirements	10.78 [31.01]	0.19 [4.30]
Sanitation	6.84 [25.24]	-
Building requirements	6.26 [24.22]	0.35 [5.89]
Adequate space/staff:child ratios	5.38 [22.56]	5.38 [22.56]
Transportation	3.78 [19.07]	0.02 [1.52]
Supervision	1.60 [12.55]	1.60 [12.55]
Staff credential requirements	1.34 [11.52]	1.34 [11.52]
General licensing requirements	1.11 [10.49]	0.16 [4.03]
Discipline	0.02 [1.52]	0.02 [1.52]

Notes. N = 4,314 programs. Column 1 reports the percent of programs receiving at least one violation of the given category, regardless of severity level. Column 2 reports the percent of programs receiving at least one five- or six-point violations, which we classify as severe. Example violations by category are provided in Table 1; note that neither ‘Nutrition’ nor ‘Sanitation’ have violations that are classified by the state as severe.

Table 3.

Likelihood of violations by violation category for public and private programs

	Private - Public Difference	
	At least one of any violation	At least one severe violation
<i>Percent of centers with violations by...</i>		
Recordkeeping	15.58*** (1.64)	1.90** (0.45)
General safety and health	1.80 (1.48)	-0.81 (1.21)
Required caregiving activities	8.10*** (1.12)	0.08 (0.11)
Medication	6.67*** (1.05)	6.67*** (1.05)
Other/Uncategorized	0.04 (1.09)	0.05 (0.10)
Nutrition	6.42*** (0.96)	-
Outdoor space requirements	1.96* (1.00)	0.04 (0.14)
Sanitation	1.12 (0.82)	-
Building requirements	1.31 (0.78)	0.49** (0.13)
Adequate space/staff:child ratios	2.65*** (0.68)	2.65*** (0.68)
Transportation	0.95 (0.61)	0.03 (0.03)
Supervision	1.02** (0.36)	1.02** (0.36)
Staff credential requirements	1.67*** (0.27)	1.67*** (0.27)
General licensing requirements	0.34 (0.33)	0.00 (0.13)
p-value from joint F-test of significance	p=0.000	p=0.000

Notes. N = 4,251 programs. This table presents coefficients from seemingly unrelated regression equations, where outcomes (dichotomous variables, denoted in rows) were regressed on an indicator for whether a program was privately operated. Column 1 reports differences in the percent of programs receiving at least one violation of the given category, regardless of severity level. Column 2 reports differences in means for the percent of programs receiving at least one five- or six-point violations, which we classify as severe. Example violations by category are provided in Table 1; note that neither ‘Nutrition’ nor ‘Sanitation’ have violations that are classified by the state as severe. ‘Discipline’ was excluded as a category in these analyses, given lack of variation on this category. Robust standard errors presented in parentheses.

+ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 4.
Differences in characteristics between public and private programs

	Public	Private	Private – Public
<i>Program characteristics</i>			
Maximum capacity	70.32 [62.29]	84.50 [59.46]	14.18*** (2.02)
Percent licensed to serve children 2 and under	39.54 [48.91]	75.92 [42.76]	36.39*** (1.50)
Percent licensed to serve daytime care only	93.24 [25.12]	75.60 [42.96]	-17.64*** (1.29)
<i>Community characteristics</i>			
Percent Black, non-Hispanic	24.01 [19.03]	25.57 [19.04]	1.56* (0.64)
Percent Hispanic	8.23 [5.93]	9.14 [6.14]	0.90*** (0.20)
Median Household Income (in \$1,000s)	41.76 [11.54]	47.41 [15.95]	5.64*** (0.50)
Unemployment rate	11.99 [4.22]	11.06 [3.92]	-0.93*** (0.14)
Maternal labor rate (%)	59.07 [12.31]	60.34 [10.43]	1.27*** (0.37)

Notes. Table reports differences in program and community characteristics between public and private programs. Public denotes programs that received either Head Start or NC pre-K funding; all other programs are defined as private. Standard deviations are reported in square brackets, and standard errors obtained from a difference in means statistical test are reported in parentheses.

+ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 5.

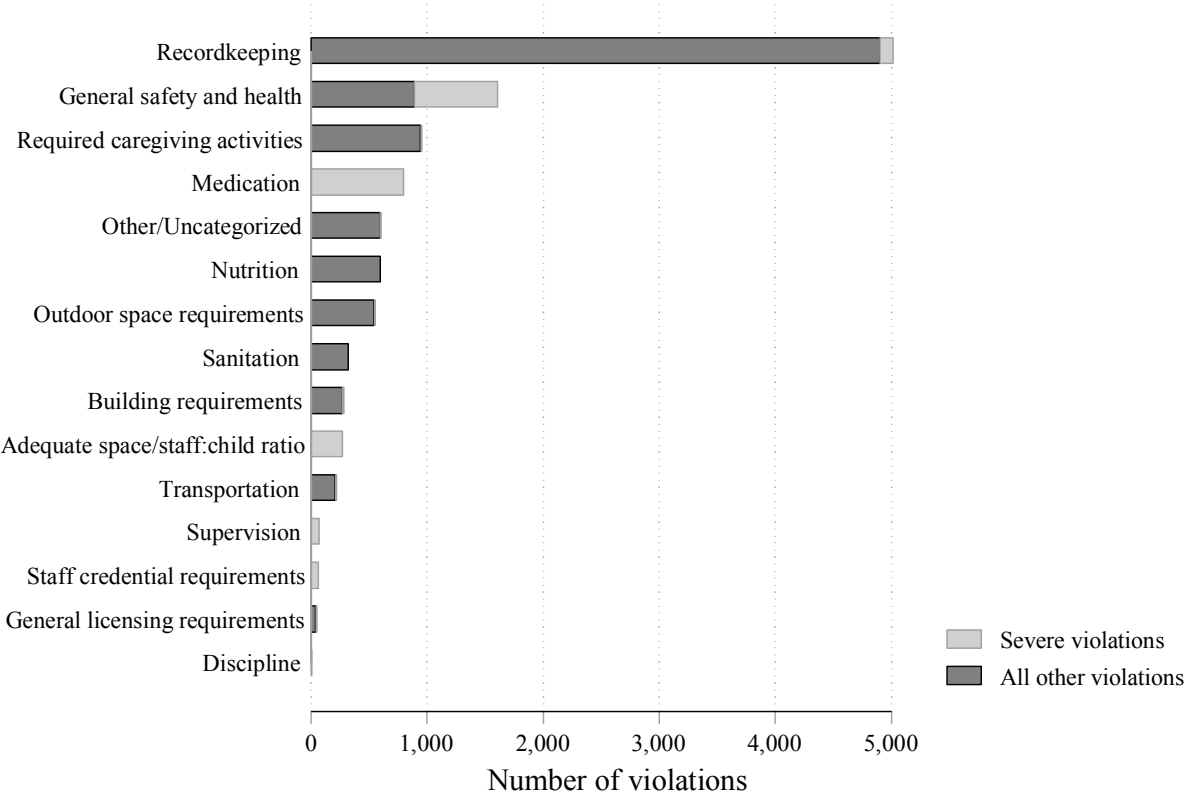
Regression-adjusted mean differences between public and private programs

	(1)	(2)	(3)	(4)	(5)
Panel A. Percent of programs with at least one of any violation					
1 = Private	11.45*** (1.59)	11.09*** (1.62)	9.61*** (1.76)	5.05** (1.71)	3.60* (1.75)
Program-level covariates?				Y	Y
Zip-level covariates?		Y			
Zip fixed effects?			Y		Y
Constant	62.78*** (1.38)	43.57*** (7.46)	64.08*** (1.25)	57.49*** (2.35)	59.96*** (2.50)
Number of obs.	4251	4251	4251	4251	4251
Adjusted R-squared	0.013	0.014	0.009	0.039	0.038
Panel B. Percent of programs with at least one severe violation					
1 = Private	8.39*** (1.52)	8.12*** (1.56)	6.34*** (1.63)	2.90+ (1.63)	1.29 (1.70)
Program-level covariates?				Y	Y
Zip-level covariates?		Y			
Zip fixed effects?			Y		Y
Constant	25.81*** (1.24)	15.33* (7.25)	27.26*** (1.16)	12.20*** (2.43)	14.40*** (2.59)
Number of obs.	4251	4251	4251	4251	4251
Adjusted R-squared	0.006	0.012	0.004	0.033	0.031

Notes. N = 4,251 programs; 63 programs did not have available geographic information and could not be merged to demographic variables, thus were excluded from the analysis. Each column represents a separate Linear Probability Model (LPM), where each dichotomous outcome (received any violation; received any severe violation) is regressed on a dichotomous variable (1 = private). Column 1 presents results from an unadjusted model, column 2 includes zip-level characteristics as covariates, column 3 includes zip-level fixed effects, column 4 includes program-level characteristics, and column 5 builds on column 4 by including zip fixed effects. Covariates included in column 2 include percent Black, percent Hispanic, median household income, unemployment rates, and maternal employment rates; covariates in columns 4 and 5 include indicators for whether a program is licensed to serve evening or overnight hours, and whether a program is licensed to serve children two and under, as well as the program's approved maximum capacity. Robust standard errors in parentheses, clustered by zip.

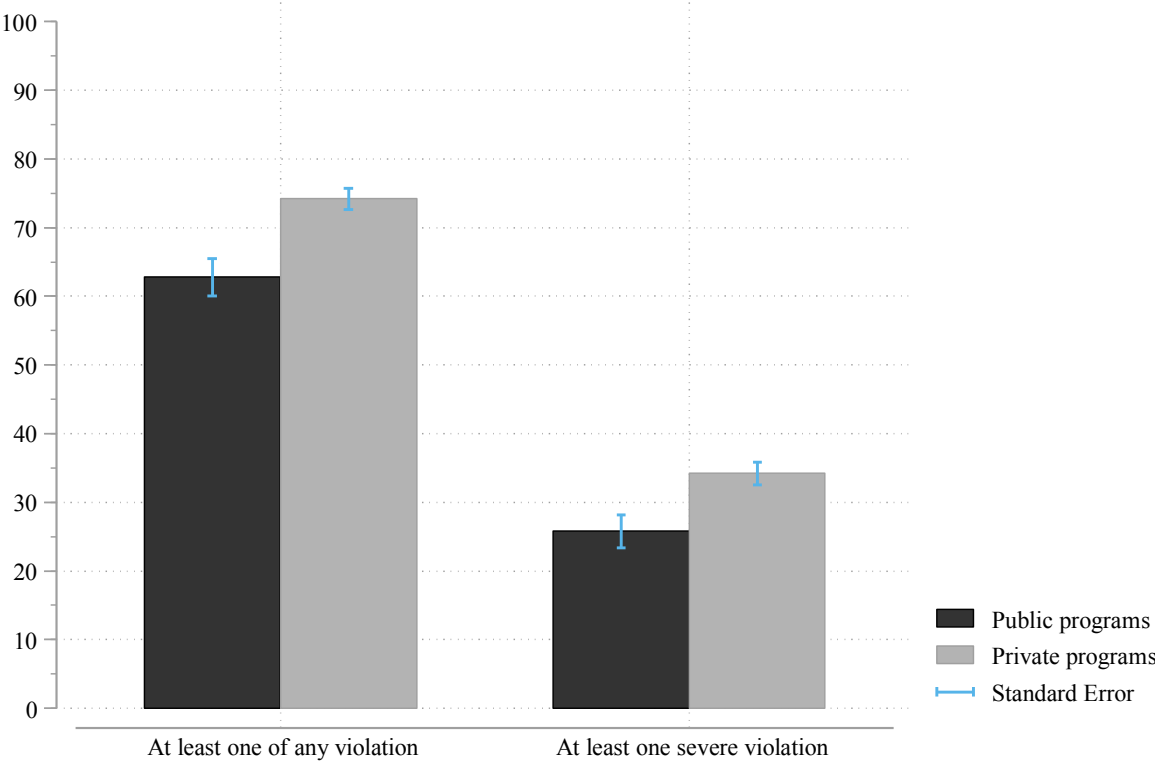
+ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Figure 1.
Distribution of violations by category



Notes. N = 11,410 violations. Figure presents the distribution of all observed violations by category. The lighter shade represents frequency of severe violations (5- or 6-point). The darker shade represents all other violations (1- to 4-point violations). Example violations by category and severity are provided in Table 1.

Figure 2.
Likelihood of receiving violations across program type



Notes. Bar graphs illustrate differences by sector (i.e., publicly- versus privately-operated ECE programs) in the percent of programs receiving at least one violation of any category. The left comparison describes the percent of programs receiving at least one violation, regardless of severity level. The comparison at right describes the percent of programs receiving at least one 5- or 6-point violation, which we classify as severe. Unadjusted group mean differences disaggregated by violation category can be found in Table 3.

Appendix A.

Top 20 most frequently observed violations

Frequency	Category	Severity	Violation
6.05%	Recordkeeping	1	All staff did not have an annual medical statement or health questionnaire on file.
3.29%	Recordkeeping	2	Prior to the expiration date of the qualification letter, the child care provider did not complete and submit required forms to complete a criminal record check (a qualification letter is valid for a maximum of three years from the date of issuance).
3.14%	General safety and health	5	All hazardous items and those products in aerosol dispensing cans were not stored in a locked room or cabinet.
3.01%	General safety and health	3	Electrical outlets not in use which were located in space used by children were not covered with safety plugs unless located behind furniture or equipment that cannot be moved by a child.
2.57%	General safety and health	3	A safe indoor and outdoor environment was not provided for the children.
2.45%	Recordkeeping	1	Emergency information did not name child's health care professional and preferred hospital.
2.44%	Recordkeeping	1	Prior to employment, all staff did not provide test results showing that they were free of active TB. TB test was older than 12 months.
2.30%	Outdoor space requirements	4	All stationary equipment more than 18 inches high was not installed over an acceptable resilient surface.
2.19%	Other	3	Center has not passed required fire inspection.
2.19%	Required caregiving activities	4	The activity plan was not current and accessible for easy reference by parents and by caregivers.
2.13%	Medication	5	Parent's medication authorization did not include required information.
2.02%	Recordkeeping	2	Each employee's personnel file did not contain an annual staff evaluation and a staff development plan.
1.93%	Recordkeeping	2	Monthly playground inspections were not completed.
1.89%	Recordkeeping	2	Complete record of monthly fire drills showing the date, time, length of time to evacuate, and signature was not maintained.
1.69%	General safety and health	5	Potentially hazardous items were not stored appropriately or removed.
1.64%	Recordkeeping	2	A valid qualification letter was not on file and available for review at the facility.
1.43%	Medication	5	Leftover medicine was not returned to the parent.
1.43%	General safety and health	5	Medications including prescription and non-prescription items were not stored in a locked cabinet or other locked container.
1.38%	Recordkeeping	3	A summary of the NC Child Care Law was not given to a parent of every child enrolled in the center.
1.34%	Recordkeeping	1	Medical exam or health assessment record was not on file for each child.

Notes. N = 11,410 violations observed. See Table 1 for example violations, and the DCDEE website (North Carolina Division of Child Development and Early Education, n.d.) for a full list of violations.