



# Hard-to-Staff Centers: Exploring Center-Level Variation in the Persistence of Child Care Teacher Turnover

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High rates of teacher turnover in child care settings have negative implications for young children's learning experiences and for efforts to improve child care quality. Prior research has explored the prevalence and predictors of turnover at the individual teacher level, but less is known about turnover at the child care center level – specifically, how turnover varies across centers or whether staffing challenges persist year after year for some centers. This study tracks annual turnover rates for all publicly funded child care centers operating in Louisiana between the 2015-16 and 2018-19 school years (n=575 centers). We document high and variable turnover rates across centers throughout the state. Each year, nearly one-third of centers experienced high turnover, that is, lost more than half of their teachers. About 27% of centers experienced high turnover for multiple years in our panel, while 44% of centers did not experience high turnover in any year. Our findings underscore concerns that sustained staffing challenges may hinder efforts to provide high-quality child care.

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## **Hard-to-Staff Centers: Exploring Center-Level Variation in the Persistence of Child Care Teacher Turnover**

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### **Abstract**

High rates of teacher turnover in child care settings have negative implications for young children's learning experiences and for efforts to improve child care quality. Prior research has explored the prevalence and predictors of turnover at the individual teacher level, but less is known about turnover at the child care center level – specifically, how turnover varies across centers or whether staffing challenges persist year after year for some centers. This study tracks annual turnover rates for all publicly funded child care centers operating in Louisiana between the 2015-16 and 2018-19 school years (n=575 centers). We document high and variable turnover rates across centers throughout the state. Each year, nearly one-third of centers experienced high turnover, that is, lost more than half of their teachers. About 27% of centers experienced high turnover for multiple years in our panel, while 44% of centers did not experience high turnover in any year. Our findings underscore concerns that sustained staffing challenges may hinder efforts to provide high-quality child care.

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## Introduction

Early childhood education (ECE) programs have the potential to improve children's school readiness and long-term developmental outcomes, primarily through the consistent and responsive interactions children have with teachers in these settings (Institute of Medicine & National Research Council, 2015; Markowitz et al., 2017; Yoshikawa et al., 2013). For the majority of young children in the United States, early educational experiences occur in center-based child care settings, many of which operate as small, independently owned or franchised businesses (NSECE Research Team, 2014). However, child care centers often struggle to retain teachers (Bassok, Markowitz, et al., 2021; Whitebook et al., 2014). Teacher turnover rates in child care far exceed annual turnover in other types of ECE programs like school-based pre-kindergarten (pre-k) or Head Start (Bellows et al., 2021; Phillips et al., 2019) and K-12 schools (Redding & Henry, 2019).<sup>1</sup> In Louisiana, the context for the current study, slightly under half of child care teachers observed one year were no longer at their center by the following fall (Bassok, Markowitz, et al., 2021).

A growing body of ECE research has explored turnover at the teacher level, describing how common is it for teachers to leave and why teachers do so (Bassok, Markowitz, et al., 2021; Grant et al., 2019; Manlove & Guzell, 1997; Schaack et al., 2020; Wells, 2015). However, there have been few studies examining center-level variability in teacher turnover. There is little evidence to date about whether teacher turnover challenges are fairly similar across child care centers or if only a subset of center experience these challenges. Similarly, no studies examine whether there are centers that struggle with turnover year after year. Understanding the nature of

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<sup>1</sup> Throughout the paper, we use the term *turnover* to describe teachers' departure from a center. We focus on this type of turnover because we are primarily interested in the organization-level instability resulting from teacher departures—regardless of whether they stay in child care or move to another ECE profession.

*center-level* turnover patterns is important for targeting policy interventions. If some centers manage to avoid the instability that is so common among child care teachers, learning from them may provide important insights to the field. If others are experiencing persistent, year-after-year challenges, then that too is important to understand so targeted supports could be offered.

This study provides the first statewide look at center-level teacher turnover in child care. We use administrative data on the universe of publicly funded child care centers in Louisiana over a four-year period to describe how teacher turnover rates vary across centers. We document how turnover varies across centers within a single year and describe the extent to which some centers experienced high turnover across multiple years.

### **Teacher Turnover in Child Care Settings**

The high levels of turnover that are common among child care teachers (e.g., Totenhagen et al., 2016) pose a major challenge for the early childhood field for several reasons. First, young children need stable relationships with the adults who teach and care for them (Bratsch-Hines et al., 2020; Howes et al., 1998; Moss et al., 1996). Sudden or frequent disruptions to these relationships resulting from teacher turnover have been linked to negative social and behavioral outcomes for children (Markowitz, 2019; Tran & Winsler, 2011). Notably, child care centers are the main provider of subsidized care for infants, toddlers, and children whose families depend on financial assistance to access ECE (Office of Child Care, n.d.). These children may particularly benefit from stable relationships, making the high rates of turnover in child care settings especially concerning.

In addition to its direct impact on children, turnover creates challenges for policymakers and practitioners working to strengthen the ECE workforce (IOM & NRC, 2015). Many quality improvement efforts involve investments in teachers' professional development through

coaching or coursework (Early et al., 2017; Hamre et al., 2017). When teachers leave their centers at high rates, returns on these quality improvement investments are compromised.

From an organizational standpoint, teacher turnover may also impede centers' ability to provide high-quality services to children and families. Qualitative research has documented the negative impacts of turnover for parents, teachers, and child care center directors (Cassidy et al., 2011; Whitebook & Sakai, 2004). Parents reported they were concerned that frequent turnover meant that no one at their center knew their child or their developmental progress; teachers reported feeling overwhelmed when other teachers left the center; and directors described frequent teacher departures straining their ability to maintain a highly qualified teaching staff and improve the center's quality (Cassidy et al., 2011). These findings, which focused specifically on turnover in early childhood, echo a more robust literature from K-12 schools, which has found that teacher turnover places burdens on the schools from which teachers depart, particularly when schools face high levels of teacher instability year after year (Grissom et al., 2016; Holme et al., 2017; Sorensen & Ladd, 2020).

As is true in most industries, some teacher turnover is to be expected and may even be desired: individuals leave jobs for many reasons (e.g., fit with the profession broadly, issues with their specific employer, or personal reasons). That said, too much turnover could negatively impact centers' functioning and, as a result, the care and education children receive. While organization management theories differ on whether low to moderate levels of turnover should be considered problematic (e.g., Park & Shaw, 2013), they concur that high levels of turnover are linked with negative organization-level outcomes.

While the literature on child care teacher turnover is growing, to date much of it has focused on teacher-level questions (e.g., predicting individual teachers' likelihood of turnover

and identifying correlates of turnover), rather than center-level. From a policy perspective, understanding center-level variability will likely reveal new ways to target funding and new strategies for addressing turnover issues.

### **Variation in Centers' Turnover Rates**

The high rates of turnover among child care centers are not surprising given these programs' financial constraints. Centers primarily rely on parent fees and tuitions to sustain themselves financially (NSECE Research Team, 2014), with many operating on slim profit margins (Gould et al., 2019). Even when child care centers access public funds through child care subsidy programs, the low per-child payments are often insufficient to cover the full cost of providing high-quality care (Isaacs et al., 2019; Workman & Jessen-Howard, 2018). In light of these resource constraints, many centers typically cannot provide their teachers a livable wage, offer limited or no benefits, and have sparse opportunities for professional development (Gould, 2015; Whitebook, McLean, Austin, et al., 2018). Multiple studies suggest that low pay and challenging work conditions contribute to teachers' turnover decisions (Manlove & Guzell, 1997; McDonald et al., 2018).

While inadequate funding may create across-the-board challenges, there are also reasons for variability in teacher turnover across centers. As one example, child care centers are small businesses that largely operate independently from each other. Center directors and other child care leaders likely differ considerably in how they carry out a number of core center operations that may impact turnover (e.g. hiring new staff, ensuring teachers are adequately trained and compensated, creating schedules, and establishing a positive professional environment for teaching and learning (LeeKeenan & Chin Ponte, 2018). Center-level turnover rates might also vary due to community characteristics outside the control of individual centers. For example,

centers face different local labor markets that may influence their ability to recruit and retain teachers.

### *Data Scarcity as a Barrier to Understanding Center-Level Turnover*

While center-level variation in turnover rates seems likely, there is limited empirical evidence on this topic, especially relative to research from K-12 schools. This is primarily due to data scarcity (Whitebook, McLean, & Austin, 2018). Over the last several decades there has been a rise in state data systems that track teachers' entries, exits, and transfers throughout the K-12 public school system. These data have facilitated a deep understanding of turnover in those contexts. Unfortunately, most states have no comparable dataset tracking child care centers or the teachers they employ, severely limiting research on turnover among early educators.

Some studies have used national census data, which can capture teachers' exits out of the child care sector altogether (e.g., Bassok et al., 2013; Brown & Herbst, 2021); but, because those data cannot link teacher departures to specific centers, they are less suited for understanding variability in how centers experience teacher turnover.

Given the absence of administrative data, some researchers have collected their own, such as through teacher surveys (e.g., Manlove & Guzell, 1997; Russell et al., 2010; Schaack et al., 2020). However, these studies typically sample too few teachers within a center to estimate center-level turnover rates. Similarly, a very small set of studies track teachers over time using a sample of teachers recruited from a small number of centers (e.g., Whitebook & Sakai, 2003), but these data are somewhat outdated and it is unclear whether child care centers included in these studies generalize to the larger population of centers, limiting these studies' ability to capture variability in center-level turnover rates.

Perhaps the best estimates of center-level turnover rates come from studies using the National Study of Early Care and Education (NSECE), which provides a nationally representative snapshot of ECE providers. In 2012, directors of subsidized child care centers reported that 21% of their staff left in the 12 months prior to being surveyed (Phillips et al., 2019). Using the same data, Caven et al. (2021) find that most ECE directors reported turnover rates that were less than 20%. However, these estimates are not limited to child care centers; they include school-based pre-k programs and Head Start centers, in which turnover is considerably lower than in child care centers (Bassok, Markowitz, et al., 2021; Whitebook et al., 2014). Further, the NSECE relies on directors' retrospective recollection of turnover. These data may be difficult to interpret due to individual differences in how directors respond (e.g., differences in directors' interpretation of who counts as a lead teacher or in recordkeeping practices that allow them to accurately recount departures).

### **Persistence in Centers' Turnover Rates**

Another limitation of existing ECE workforce data (including the NSECE) is that it is cross-sectional, providing only a snapshot of turnover rates at a single point in time. Given the lack of longitudinal data, prior research has not explored the extent to which child care centers observed to have high rates of turnover are experiencing an anomalously difficult year or if they have persistently high turnover rates, year after year.

Though not well understood in child care, or even in ECE more broadly, persistent teacher staffing challenges have received some attention in recent K-12 research (Holme et al., 2017; Sorensen & Ladd, 2020). For example, Holme et al. (2017) use a ten-year panel of administrative data on Texas public schools to explore whether some schools experience persistent high turnover. They define high turnover as schools with a turnover rate of at least



30% and find that 60% of schools had high turnover for at least one year in the panel. Only 4% of schools *persistently* had this level of turnover, which they define as having high turnover for at least seven years (i.e., about two-thirds of the years in the panel). Research leveraging panel data has found that persistent teacher instability has prolonged consequences on school-level outcomes and student achievement (Holme et al., 2017; Sorensen & Ladd, 2020).

### **Present Study**

This paper is the first to look at center-level measures of teacher turnover in a large state sample and to examine the issue of persistently high turnover in child care settings. We examine center-level turnover rates using a panel dataset tracking all lead teachers working in toddler (15- to 36-months old) and preschool-aged (3- to 5-years old) classrooms in all publicly funded child care centers operating in Louisiana between the 2015-16 and 2018-19 academic years. We answer the following research questions:

1. On average, what proportion of teachers at publicly funded child care centers left their center each year, and to what extent did this turnover rate vary across centers?
2. To what extent were centers' turnover rates consistent from one year to the next? That is, how common is it for centers to experience persistently high turnover?

After documenting variation in center-level turnover both annually and over time, we then conduct a set of supplementary analyses that put into perspective the rates of “persistently high turnover” and highlight the potential utility of this metric for identifying centers in need of intervention. Specifically, we (1) explore to what extent the rates of persistently high turnover documented in Louisiana exceed what we might expect to observe by chance, (2) compare the prevalence of persistently high turnover in child care centers to rates in other ECE sectors that

receive substantially more resources for teacher support, and (3) explore whether persistently high turnover is correlated with another quality measure used by the state.

### **Method**

We use data from Louisiana's Quality Rating and Improvement System (QRIS). Beginning in the 2015-16 academic year, all publicly funded ECE programs – including child care, Head Start, and school-based pre-k – were required to participate in Louisiana's statewide QRIS.<sup>2</sup> As part of the QRIS, all classrooms at these centers were observed at least twice per year by a local observer who recorded the name of the lead teacher in the classroom as part of the observation.

Although these data were collected to track observational measures of classroom quality, an unintended benefit of these data is that they provide an opportunity to identify the lead teacher in every classroom in all publicly funded ECE programs in Louisiana at multiple time points.<sup>3</sup> Linking these data over time allows us to track which teachers remained at their center and which turned over. We can then aggregate these data on individual teachers' departures to the center level to measure the amount of turnover each program experienced annually and examine variation in these rates across centers.

In our primary analyses, we limited the analytic sample to child care centers (i.e., we exclude programs from other ECE sectors). Among child care centers, we further limit the sample to those operating in every year between the 2015-16 and the 2018-19 academic years

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<sup>2</sup> In Louisiana, some child care centers do not accept public dollars and thus are not included in QRIS. Our data include about two-thirds of all licensed child care centers across the state.

<sup>3</sup> One notable limitation of the data is that we only observe lead teachers (i.e., we do not observe instructional aides or other paraprofessionals), and we only observe toddler and preschool-age classrooms (i.e., we do not have infant classrooms). Louisiana's administrative data started to include infant teachers beginning in 2018-19. However, as we do not observe infant teachers in prior years, we excluded these observations for comparability.

(n=575 centers) (i.e., we omit programs that were closed at any point in our panel). This allowed us to track teacher departures from each center over three years (i.e., the turnover from 2015-16 to 2016-17 through that from 2017-18 to 2018-19) and ensured each center had the same number of years for which we can estimate annual turnover rates.<sup>4</sup> In supplemental analyses we include Head Start and school-based pre-k programs but impose these same sample restrictions (i.e., they must be observed for all years in the panel).

### **Defining Center-Level Turnover Rates**

To compute center turnover rates, we first took teachers observed in the 2015-16 academic year and created an indicator variable equal to 1 if the teacher was not observed in a teaching role at the center in 2016-17, and 0 if the teacher stayed as a teacher at the same center (the matching of teachers over time is described in greater detail in Appendix B). Next, we computed the average of this variable across all teachers at each center; this represents the proportion of a center's lead teachers lost in the first year of our panel (e.g., the turnover rate for 2015-16). We then calculated this same statistic for each of the next two years (e.g., a center's turnover rate of 2016-17 is the percentage of teachers observed in 2016-17 who are no longer teaching by 2017-18, irrespective of whether teachers were also observed at that center in prior years). We used these continuous measures in assessing the variability of turnover across centers.

### **Identifying Centers with High and Persistently High Turnover**

“High turnover” and “persistently high turnover” were derived from centers' annual turnover rates. There is no theoretical or empirical guidance from the literature on how “high

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<sup>4</sup> Note that this decision has implications for the generalizability of this study. In particular, we are, by definition, focusing on centers that remained open for the duration of our panel and excluding the most unstable centers that closed down at any point. In Table A1 in the appendix, we compare the centers that we include and do not include in the study. On average, centers we excluded from the study were smaller in size, more likely to have high turnover, and demonstrated lower center quality at baseline, relative to centers included in this study.

turnover” should be operationalized in early childhood contexts. In the K-12 context, Holme et al. (2017) used 30% as a threshold for classifying schools with high turnover (with the average school in their data having roughly 20% turnover in any given year); however, these authors also note the absence of clear guidance for defining high turnover. In the present study, we defined a child care center as having high turnover if it lost more than half of its lead teachers in a year. We selected this threshold for its ease in interpretation and because it represents an “above average” threshold relative to turnover rates observed in our data. We also examined how sensitive our results are to both less and more restrictive definitions (see Table A2 in the appendix).

We defined a center as having persistently high turnover if it exceeded this 50% threshold for at least two years in our panel. This definition (i.e., centers having high turnover for two-thirds of the years under study) follows that used by Holme et al. (2017).

### **Center Quality**

High or persistently high turnover may be seen as a metric for center functioning, i.e., their capacity to provide high-quality services for children and families. One advantage of the Louisiana QRIS data is that, in addition to information about turnover, they include the quality rating assigned by Louisiana’s QRIS. Under this QRIS, all publicly funded ECE centers receive an annual score which ranges from 1 to 7. This center-level score is calculated by aggregating the quality scores for every classroom within that center, which are derived from the Classroom Assessment Scoring System (CLASS; Pianta et al., 2008), a widely used and validated scored classroom observation tool that captures different dimensions of the quality of teachers’ interactions with children on a 1 to 7 scale. We provide more detail on how Louisiana calculates an overall score for each center in Appendix C. We compare this rating across centers that

experience high or persistently high turnover as one way to gauge the turnover measures' concurrent validity.

## **Analysis Plan**

### ***Documenting Variability in Centers' Teacher Turnover Rates***

The first aim of this paper was to document center-level variability in annual turnover rates. To address this aim, we computed each center's turnover rate and summarized these rates for our statewide sample of centers in each year of our panel. In addition to presenting these overall rates, we summarized turnover rates separately for "smaller centers" defined as those with 3 or fewer lead teachers, and "larger centers" as those with 4 or more lead teachers in 2015-16.<sup>5</sup> We stratified the sample for two reasons. First, the influence of high turnover on a center may depend, in part, on how many teachers that center relies on to sustain day-to-day operations. Larger centers may have more organizational resources to respond to staffing difficulties, whereas in smaller centers the burden of teacher departures is borne (and therefore felt more acutely) by fewer teachers. Second, turnover rates may fluctuate more considerably for smaller centers relative to those with a larger pool of teachers simply due to the small denominator. Thus, it may be important to separately assess the stability of this measure by center size.

### ***Describing the Prevalence of High and Persistently High Teacher Turnover***

The paper's second aim was to understand the persistence of high turnover at centers over time. We addressed this aim by documenting the pairwise correlations between centers' turnover rates from one year to the next. Correlations that are not statistically different from zero would indicate that centers' turnover rates are not consistent from one year to the next (e.g., low one year but high the next). Moderate to high correlations, however, would suggest that some centers

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<sup>5</sup> This was based on the median center size, which was 3 teachers. Accordingly, 53% of the centers in our sample were considered "smaller centers", and the remaining 47% were considered "larger centers."

consistently struggle with high rates of turnover, or inversely, that some centers consistently experience relatively little turnover.

We also calculated the percentage of centers that have high turnover never, once, twice, or in all three years of the panel. A single year of high turnover may be anomalous, whereas multiple years of high turnover may reflect more persistent center-level challenges. Similarly, centers without high turnover in any year may be particularly successful in maintaining a stable teaching staff. Again, we calculated this both for the overall sample and for smaller and larger center subsamples.

### *Supplementary Analyses*

After presenting our two key descriptive findings – on variability in turnover across centers and the prevalence of persistent high turnover – we conducted three supplementary analyses to highlight the significance of the results. Whether or not center-level turnover rates are viewed as problematic is a subjective question, but these analyses inform that question by addressing the following questions: (1) is the variation in turnover rates documented in Louisiana child care centers higher than what we'd expect by chance if all centers struggled similarly with staffing; (2) are the center-level turnover rates documented higher than those observed in other early childhood settings that receive higher levels of funding; and (3) do the turnover rates documented provide a useful metric for identifying centers that may be experiencing greater challenges providing high quality care?

Throughout this analysis we hypothesized that high turnover and especially persistently high turnover would be indicative of the teacher staffing challenges that subset of centers were facing (e.g., directors who struggled to foster stability at their center, or communities where more alternative job opportunities were available). Of course, it is also possible for centers to

demonstrate high or persistently high turnover simply by chance or bad luck (e.g., many teachers leaving a center for personal reasons but coincidentally at the same time). This possibility is especially likely given systemic issues facing the child care sector and the baseline high levels of teacher turnover (Bassok, Markowitz, et al., 2021; Whitebook, McLean, Austin, et al., 2018).

To get at this concern, we conducted a set of simulations where we kept the state-level rate of turnover as it is, but randomly assigned this turnover to teachers across the sample. For instance, if 40% of teachers across the state were observed to have turned over in a given year, in our simulation we randomly assigned 40% of teachers to turn over. Note that when we do this, it is not necessarily the case that each center will have the same turnover rate, because teacher turnover is independent of centers. Some centers will have lower turnover rates, and others higher. However, the variability we observe in this simulation will not be due to some underlying challenge facing these centers: it is definitionally random which teachers will leave and which stay. Thus, any clustering we observe in this scenario provides a sense of how much variability we might expect to observe if turnover problems were not concentrated at specific centers. We compared the rates of high and persistently high turnover averaged from 1,000 such simulations to the center-level turnover actually observed in the data. This comparison offered a perspective on how much our results are explained by chance versus true clustering of staffing challenges among a subset of centers.

A second way to put our results into perspective is by comparing the overall rates of high-turnover centers and the prevalence of persistently high turnover across child care centers to those observed in other ECE sectors in Louisiana (specifically, Head Start and school-based pre-k programs). This comparison provided a useful benchmark for understanding the extent to which persistent staffing challenges were an especially pronounced issue for programs in the

child care sector relative to other ECE providers that provide significantly more resources and pay their teachers at higher rates.

Finally, we explored whether patterns in centers' turnover rates over time corresponded with a measure of center-level quality already used statewide in Louisiana. We compared quality scores assigned by the state to centers in 2017-18 across three groups: (1) centers that did not experience high levels of teacher turnover over the course of that same year, i.e., from 2017-18 to 2018-19; (2) centers that had high turnover that year, but not in any of the prior two years; and (3) centers that both experienced a high rate of teachers leaving from 2017-18 to 2018-19 *and* had experienced high turnover for at least one of the prior two years. These comparisons allowed us to understand if centers that have sustained high turnover over multiple years differ, on average, from those centers experiencing relatively less teacher turnover on another measure of center quality.

## **Results**

Overall, about 45% of child care teachers in any one year were no longer teaching at their center the following year. Our results explored how this turnover was distributed across centers and over time.

### **Variation in Centers' Turnover Rates**

As shown in Table 1, on average, child care centers in our sample lost 39% to 42% of their teachers annually. Within each year, there was considerable variability in turnover rates. For instance, the average center lost 40% of its lead teachers from 2017-18 to 2018-19, but 22% of centers did not experience any teacher turnover, and 30% of centers experienced high turnover (i.e., they lost more than half their teachers).



Relative to smaller centers with three or fewer lead teachers, larger centers had slightly higher mean turnover rates, were less likely to retain all teachers, and were more likely to experience high turnover.

### **Identifying Centers with Persistently High Teacher Turnover**

Average turnover rates were relatively similar across the years included in our panel. However, these means do not capture whether the same centers persistently experienced high turnover over the years in our panel. The rightmost columns of Table 1 show pairwise correlations between centers' turnover rates for each year of the study period. They provide evidence that turnover rates were modestly correlated from one year to the next ( $r$  ranges from .31 to .36).

Table 2 shows the number of years centers experienced high turnover (i.e., greater than half of their teachers leaving). In our data 44% of the full sample did not experience high turnover in *any* of the years under study, meaning they never had greater than half of their teachers leave from one year to the next. The majority of centers (56%) did experience high turnover for at least one of the three years. However, for many centers (29%), we observe high turnover only in a single year. The remaining 27% demonstrated persistently high levels (18% experienced high turnover in two of three years of our data and 9% experienced high turnover in all three years).

Larger centers were more likely to demonstrate persistently high turnover, with 33% of centers meeting this definition, and 12% doing so for all years under study. In contrast, 22% of smaller centers lost more than half their teachers for two or more years, and only 6% did so for all three years.

### **Supplemental Analyses**

We conducted three supplementary analyses to examine whether the patterns documented above indicated meaningful clustering of staffing challenges in a subset of centers; how the persistently high levels of turnover in child care compared to other ECE sectors; and how these turnover measures corresponded with Louisiana's measure for center quality.

In our main results, we observed that 27% of centers had high turnover two or more years and 9% experienced high turnover in all three years. These rates *may* suggest that these centers are experiencing specific underlying challenges that are leading them to higher-than-average turnover for multiple years. On the other hand, given the high prevalence of turnover among child care teachers in Louisiana, some centers might show persistently high levels of turnover even if the likelihood of teacher turnover had nothing to do with the specific center where they were employed. Figure 1 explores this possibility, plotting the proportions observed in our data (dashed vertical lines) against results from 1,000 simulations under a scenario in which turnover was randomly assigned to teachers, irrespective of where they were employed. Relative to our simulations, centers in our data were both more likely to have no years of high turnover *and* to have three years of high turnover. For instance, if turnover was randomly assigned to teachers across the state, such that teachers who turned over were effectively distributed randomly across centers, 3% of programs would have had three years of high turnover. The rate we observed is three times higher. Similarly, in the simulation, 33% of centers would have had no years of high teacher turnover, but in our data this rate was 44%. In other words, both persistently high turnover centers and centers without any high turnover appear more than we would expect if turnover patterns were not clustered in particular centers. The simulations provide compelling evidence that, at least in Louisiana, while teacher turnover is high across the board, some centers struggled far more than others and others have found ways to retain their teachers year after year.

We show in Table A2 in the appendix that the overrepresentation in our data holds even across alternate threshold definitions, particularly for the “no high turnover” category.

Next, we compared our findings to the prevalence of high turnover and persistently high turnover in other ECE sectors in Louisiana (Table 3). Both high turnover and persistently high turnover were far more common in child care programs relative to other publicly funded ECE programs. For instance, 30% of child care centers had high teacher turnover from 2017-18 to 2018-19, compared to 24% of Head Start programs and 13% of pre-k programs. Child care centers were also more likely to experience persistently high turnover. While over one-quarter of child care centers had high turnover for two or more years, this was only the case in 11% of Head Start programs and 6% of pre-k programs. Just 2% of Head Start programs and 1% of pre-k programs had this level of turnover for all three years, compared to 9% of child care centers. Similarly, 44% of centers did not have high turnover in any year compared to 58% of Head Start programs and 71% of pre-k programs. These comparisons highlight that the persistence of high teacher turnover is particularly salient in child care programs.

Finally, we examined differences in center quality – as measure by the state – between centers that did not have high turnover in 2017-18, centers that lost a high proportion of teachers only from 2017-18 to 2018-19, and centers with high turnover in 2017-18 and at least one of the prior two years.<sup>6</sup> Table 4 shows that centers that experienced high rates of turnover both from 2017-18 to 2018-19 and in at least one prior year had lower quality scores in 2017-2018 than either of the other two groups. Their center quality scores were significantly lower than those from centers that did not experience high turnover at all (a difference of 0.40 points;  $p < .001$ );

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<sup>6</sup> There were 172 centers with high turnover rates in 2017-18. Of these, 35% of centers did not experience high turnover in any of the prior years, while the remaining 65% experienced high turnover for at least one of the prior years.

this difference reflects about two-thirds of a standard deviation. Centers with a prior history of high turnover rates had lower quality than the centers for which high turnover was experienced only in 2017-18 (a difference of 0.21 points, or about one-third of a standard deviation;  $p < .05$ ). This pattern was especially pronounced among centers with three lead teachers or fewer, whereas for larger centers this difference was not statistically significant. However, we note the small number of centers with high turnover from 2017-18 to 2018-19 only.

### **Discussion**

Teachers play a critical role in child care centers' ability to meet two key goals – supporting young children's learning and development, and providing safe and reliable care so families can pursue employment and education opportunities. The child care sector has long struggled with finding and retaining teachers (Bassok, Markowitz, et al., 2021; Whitebook, McLean, Austin, et al., 2018), and these challenges have implications for both children (Markowitz, 2019; Tran & Winsler, 2011) and the teachers and leaders left behind (Cassidy et al., 2011; Whitebook & Sakai, 2004). However, data limitations (Whitebook, McLean, & Austin, 2018) have limited researchers' ability to study turnover and learn about how to strategically target policies to address it. Indeed, prior analyses on teacher turnover, both in child care and ECE more broadly, are typically cross-sectional and are focused at the individual level. In contrast, studies seldom examine how teacher turnover is distributed across centers or whether this turnover is clustered at specific centers. This represents a gap in the literature as these metrics may be helpful both for better understanding the nature of teacher turnover in child care, and for supporting potential interventions targeting or delivered at specific centers.

This study filled those gaps using statewide panel data from Louisiana to estimate variability in centers' turnover rates over a four-year period. To our knowledge, it is the first to

quantify the extent to which turnover rates vary across centers in a given year, and the extent to which some centers experience high levels of turnover year after year.

Consistent with prior studies (Totenhagen et al., 2016; Whitebook & Sakai, 2003) our findings suggest mean turnover rates were quite high: On average, centers lost about 40% of their lead teachers from one year to the next. However, there was substantial variability in these turnover rates. For instance, about one-quarter of centers experienced no turnover in a given year, and about one-third lost half their teachers or more.

Our results further showed that for a non-trivial portion of centers, high levels of turnover were experienced year after year. In our data, 27% of centers lost more than half of their teachers for at least two of the three years observed, and 9% of the sample had this level of turnover in all three years. Our supplemental analyses showed that these rates of persistently high turnover were greater than what we might expect if the teachers who turned over were randomly distributed across centers throughout the state (Figure 1) and much greater than rates observed in other Head Start or school-based pre-k s (Table 3). That this systematic clustering of teacher turnover over time for some centers also corresponded with Louisiana's measure of center quality lends credence to the notion that longitudinal measures of centers' turnover rates are worthy of study and an important metric for policymakers.

Oftentimes, discussions of how best to tackle teacher turnover in ECE focus either on the individual teachers themselves, such as the need for better pre-service and in-service training, or on systemic challenges, such as the low levels of public investments (Bridges et al., 2011; Cassidy et al., 2011; Doromal & Markowitz, 2021; Grant et al., 2019; Manlove & Guzell, 1997; McDonald et al., 2018; Schaack et al., 2020; Totenhagen et al., 2016; Whitebook & Sakai, 2004). While both of these types of supports are indeed needed, our findings suggest that policies

targeted directly towards centers may be useful as well. That there is so much variation across centers – both in a single year and over time – suggests there may be center-level drivers of turnover, and also center-level strategies for addressing turnover.

Identifying these center-level strategies requires a better understanding of what is driving the patterns documented in the current study. As one example, local labor market factors could explain why some centers continually struggle to maintain a stable teaching workforce while others do not. Our findings could also be influenced by the characteristics of the leaders managing these centers, who play an important role in addressing these factors, such as through creating supportive and collaborative workplaces, fostering mentoring relationships, and providing feedback for their teachers (Doromal & Markowitz, 2021; Douglass, 2017; Jeon & Wells, 2018; McDonald et al., 2018). More research is needed to examine the correlates of this variability.

Future research might investigate whether community-level factors correlate with centers' turnover rates. In particular, it may be important to identify whether communities with certain demographic compositions are more likely to have persistently high turnover centers or if there are particular groups of children and families that are more likely to be served by these high and persistently high turnover centers. Researchers should be particularly attentive to equity implications when examining community-level correlates, especially given that other research documents structural inequities along socioeconomic status and by race and ethnicity in who has access to safe and high-quality ECE programs (Latham et al., 2020; Valentino, 2018).

Future research should also examine whether there are specific leadership styles or practices that support centers' staffing stability. This research would help clarify how directors

contend with teacher turnover and the extent to which high turnover impedes on their ability to lead and manage a high-quality child care center.

### **Limitations**

Although our study provides important new insights on teacher turnover, it has a few caveats that limit its generalizability. First, our findings likely *understate* the overall prevalence of high turnover among the universe of child care centers serving children in Louisiana during this period. We focus on only the centers that remained operational throughout our entire study period. This allowed us to better understand the longitudinal nature of centers' turnover issues; yet, as Table A1 in the appendix shows, centers that were open in 2015-16 but closed before 2018-19 were considerably more likely to demonstrate high levels of turnover relative to the centers that remained open. As teachers are a vital component of the operations of child care centers, it is plausible that high teacher turnover could contribute to difficulties in keeping a center open. Further research might examine the extent to which turnover relates to centers' eventual closure decisions.

Second, our analysis only considers a single state at a single pre-pandemic point in time. It is important to examine how these patterns look in other contexts. In particular, the coronavirus pandemic exacerbated already troubling staffing issues for child care (Bassok, Smith, et al., 2021; Weiland et al., 2021). Understanding how COVID impacted center-level turnover is essential for recovery efforts, as is examining the impacts of the unprecedented investments in child care in the wake of the pandemic.

### **Policy Implications and Conclusion**

Using statewide data on publicly funded child care centers in Louisiana, we found high rates of teacher turnover that systematically varied across centers and persisted for some centers

across multiple years. These measures of high and persistently high teacher turnover corresponded with Louisiana's measure of center quality, thus underscoring concerns that the teacher staffing challenges pervasive in child care are likely to impede on policymakers' efforts to improve ECE quality in this sector.

Policymakers should recognize there are many factors likely driving the clustering of turnover at specific centers, including community- or system-level factors that influence how centers are able to staff (e.g., navigating resource constraints in an underfunded child care system) and features of centers themselves (e.g., work environments or how those centers are managed). Addressing these center-level drivers of turnover could help stabilize the workforce. For instance, providing center directors at centers with persistently high turnover with explicit training on how to manage an effective center and lead a collaborative team of teachers may be effective, as could targeting additional financial supports to centers where labor market conditions make it particularly difficult to retain teachers.

At the same time, broader solutions are also needed. While our key finding—that there is considerable variation in turnover across centers—is the study's most novel contribution, the study also adds to the growing body of research demonstrating that overall, turnover rates in child care settings are very high. Four-fifths of centers each year experienced at least some teacher turnover, and on average centers are losing 2 in 5 teachers each year. Addressing these bigger systemic issues – including the historical lack of public funding for the system – will be critical.

Investments that address child care teacher compensation may be an especially promising action for policy. Compensation issues are commonly cited in teachers' intentions to leave their center (McDonald et al., 2018; Schaack et al., 2020; Whitebook & Sakai, 2004). Qualitative



research (McDonald et al., 2018; Whitebook & Sakai, 2004) and popular press articles (Petersen, 2021) suggest that centers' difficulty offering higher wages, especially relative to available jobs that require similar levels of education and training, often pose challenges for both hiring qualified staff and keeping them from exiting the workforce altogether (e.g., to find jobs in comparable-paying fields). In Louisiana, where this study was conducted, the average child care lead teacher earned about \$9.50 per hour in 2018 (Bassok et al., 2019), about half of the wage rate of lead teachers in school-based pre-k classrooms. This wage disparity potentially explains why our results show that persistently high turnover is more salient in child care relative to other ECE sectors. Recent research demonstrates the promise of wage enhancements for addressing teacher retention (Bassok et al., 2020; Bridges et al., 2011; Gable et al., 2007).

The calls for heightened public investment in child care following COVID-19 present a novel opportunity for policymakers to innovate and invest in these strategies for supporting the child care workforce. This period is thus also an important opportunity to learn how to support this sector over the long-term by studying current policy actions. Ensuring the availability of data, and potentially collecting new information as part of these policy rollouts, will be essential for helping policymakers understand the impact of their investments and ensuring the returns for teachers, centers, and child development.

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TABLE 1  
*Turnover Rates for Centers in Study Sample*

	Summary statistics			Year-to-year correlations		
	Mean center-level turnover rate	% of sample with no turnover	% of sample with high turnover	2015-16	2016-17	2017-18
<i>All centers</i>						
2015-16	42%	22%	33%	1.00		
2016-17	39%	26%	29%	0.31	1.00	
2017-18	40%	22%	30%	0.21	0.36	1.00
<i>Smaller centers</i>						
2015-16	37%	37%	27%	1.00		
2016-17	35%	39%	27%	0.27	1.00	
2017-18	36%	33%	26%	0.15	0.36	1.00
<i>Larger centers</i>						
2015-16	48%	6%	39%	1.00		
2016-17	43%	11%	32%	0.36	1.00	
2017-18	44%	10%	34%	0.28	0.34	1.00

Notes: All centers based on 575 centers in study sample. We define smaller centers as those with 3 lead teachers or fewer; 305 centers met this definition. We define larger centers as those with 4 or more lead teachers; 270 centers met this definition. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next.

TABLE 2  
*Prevalence of Persistently High Teacher Turnover Among Centers in Study Sample*

	n	% of sample by number of years with high turnover			
		0 years	1 year	2 years	3 years
All centers	575	44%	29%	18%	9%
Smaller centers	305	48%	30%	16%	6%
Larger centers	270	39%	29%	21%	12%

Notes: We define smaller centers as those with 3 lead teachers or fewer; we define larger centers as those with 4 or more lead teachers. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next. Recall that we limit the sample to centers operating for the entire duration of the panel, so that center closures do not drive any of these patterns. See Table A1 in the appendix for more information.

TABLE 3

*Prevalence of High and Persistently High Turnover Centers, by ECE Sector*

	n	% of sample with high turnover, by year			% of sample by number of years with high turnover			
		2015-16	2016-17	2017-18	0 years	1 year	2 years	3 years
Child Care	575	33%	29%	30%	44%	29%	18%	9%
Head Start	184	14%	16%	24%	58%	31%	9%	2%
Pre-K	630	11%	11%	13%	71%	23%	5%	1%

Notes: All programs were operational in Louisiana between the 2015-16 and 2018-19 school years. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next. Persistently high turnover centers are those with at least two years with high teacher turnover.

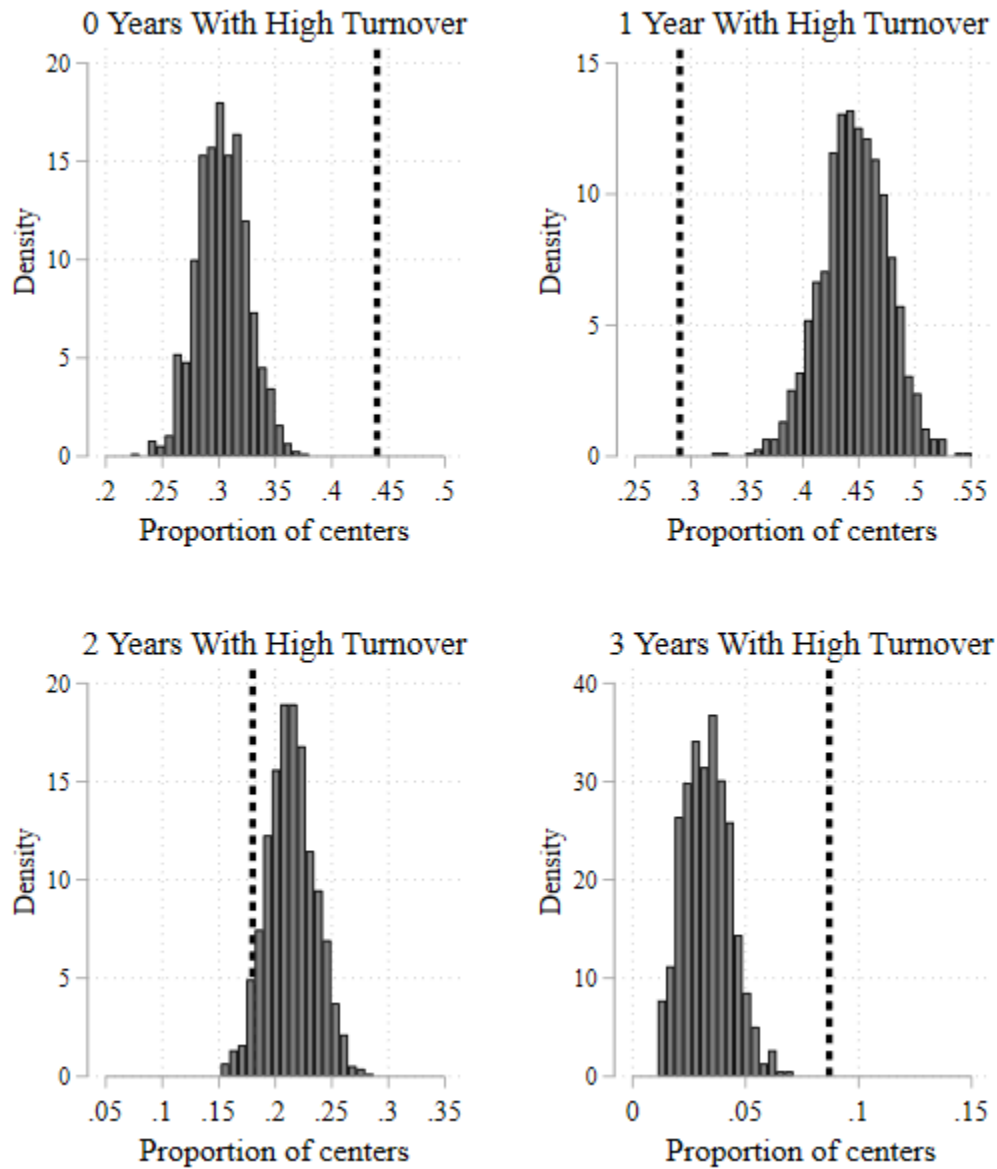
TABLE 4  
*Center Quality Scores in 2017-18, by High Turnover in Current and Prior Years*

Sample	(1)	(2)	(3)	Difference between (3) and (1)	Difference between (3) and (2)
	No high turnover from 2017-18 to 2018-19	High turnover from 2017-18 to 2018-19 only	High turnover from 2017-18 to 2018-19 and at least one prior year		
All centers	4.78 [0.62] (n=403)	4.59 [0.58] (n=61)	4.38 [0.56] (n=111)	-0.40***	-0.21*
Smaller centers	4.68 [0.65] (n=226)	4.64 [0.62] (n=32)	4.25 [0.55] (n=47)	-0.43***	-0.39**
Larger centers	4.91 [0.56] (n=177)	4.54 [0.55] (n=29)	4.48 [0.55] (n=64)	-0.43***	-0.06

Notes: All centers based on 575 centers in study sample. We define smaller centers as those with 3 lead teachers or fewer; 305 centers met this definition. We define larger centers as those with 4 or more lead teachers; 270 centers met this definition. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next. Center quality is measured on a 7-point scale; more information is provided in Appendix C. Standard deviations are presented in bracket parentheses.

Significance: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

FIGURE 1  
*Comparison of Observed Proportion and Simulated Distributions of Persistently High Teacher Turnover*



Notes: The figure above summarizes 1,000 simulations, where we fix the likelihood of individual teachers' turnover but randomly assign turnover to teachers such that turnover is uncorrelated with center characteristics. The vertical dashed line represents the observed proportion in our data; this allows us to examine whether the prevalence of centers with persistently high turnover in our data (or even the lack of high turnover) is different from what we might expect to observe were teacher turnover distributed randomly across centers.

**APPENDIX A: SUPPLEMENTAL TABLES**

TABLE A1

*Comparison of Centers Included in and Excluded from the Study, as Observed in 2015-16*

	Included in Study (n=575)	Excluded from Study (n=183)
Center size (% of sample)		
1-3 lead teachers	53%	73%
4 or more lead teachers	47%	27%
% of sample with high teacher turnover		
All centers	33%	74%
Centers with 1-3 lead teachers	27%	75%
Centers with 4 or more lead teachers	39%	71%
Center quality (Mean [SD])	4.36 [0.63]	4.07 [0.67]

Notes. Table describes the 758 centers observed in 2015-16 across key study variables. The first column describes centers included in our study sample, which we define as centers open in all years between the 2015-16 and 2018-19 school years. The second column describes centers that were open in 2015-16 but dropped out of the data prior to the last year of the panel (e.g., due to center closure). Note that in our four-year panel, there were an additional 138 centers that were not open in 2015-16 but observed in at least one subsequent year; these centers are not represented in the table above. In all, the 575 centers in the study represent 76% of all centers observed in 2015-16, 81% of all centers in 2016-17, 82% of centers in 2017-18, and 82% of centers in 2018-19. Center quality is measured on a 7-point scale; more information is provided in Appendix C. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next.

TABLE A2

*Sensitivity of Sample Distributions to “High Turnover” Definitions*

	% of sample, by number of years meeting high turnover definition											
	All Centers (n=575)				Smaller Centers (n=305)				Larger Centers (n=270)			
	0 years	1 year	2 years	3 years	0 years	1 year	2 years	3 years	0 years	1 year	2 years	3 years
Definition 1: >30% turnover												
Observed distribution	10%	21%	32%	37%	11%	28%	29%	32%	9%	13%	35%	43%
Simulated distribution	3%	18%	42%	37%	5%	23%	43%	30%	2%	14%	41%	43%
Definition 2: >50% turnover												
Observed distribution	44%	29%	18%	9%	48%	30%	16%	6%	39%	29%	21%	12%
Simulated distribution	33%	44%	20%	3%	37%	43%	18%	3%	30%	45%	22%	3%
Definition 3: >66.7% turnover												
Observed distribution	51%	29%	14%	5%	61%	27%	9%	2%	54%	26%	15%	6%
Simulated distribution	44%	40%	15%	2%	39%	43%	16%	2%	52%	37%	10%	1%
Definition 4: 100% turnover												
Observed distribution	85%	13%	2%	0%	79%	17%	4%	1%	92%	8%	0%	0%
Simulated distribution	76%	19%	4%	1%	65%	28%	6%	1%	92%	8%	0%	0%

Notes: Table describes the sensitivity of our persistently high turnover findings to how high turnover is defined. Definition 1 is based on the threshold used in many K-12 studies; Definitions 2 and 4 are intended to describe intuitive quantities of teachers lost (i.e., half and all, respectively); and Definition 3 roughly defines the threshold for the uppermost quartile on the distribution of turnover rates in 2015-16. “Observed distribution” is the distribution of centers in our data, according to how many years they meet or exceed the given high turnover threshold definition. “Simulated distribution” averages the distribution of centers across 1,000 simulations, where we fix the likelihood of individual teachers’ turnover but randomly assign turnover to teachers such that turnover is uncorrelated with center characteristics. In general, our data have a greater prevalence of persistently high turnover relative to the simulations, particularly when looking at centers with all three years with high turnover. The exception is Definition 4, though arguably, this may be an unrealistically high definition. We define smaller centers as those with 3 lead teachers or fewer; we define larger centers as those with 4 or more lead teachers.



**APPENDIX B: DATA AND MATCHING PROCESS**

Administrative data include lead teachers observed at all classrooms in all publicly funded programs in Louisiana from the 2015-16 to the 2018-19 academic year. These data come from the state's QRIS, where lead teachers' names are recorded in semesterly observations. Notably, there are no teacher IDs in the source dataset, meaning that identifying and tracking teachers over time required name matching. This process is described below; for a full description of this process, see Bassok, Markowitz, Bellows, & Sadowski (2021).

We matched teachers across time points using their names, as reported by the observer conducting the observation. Teacher names sometimes had different spellings across time points. Additionally, teachers may also use slightly different first names from year-to-year or change last names (e.g., upon marriage). We used fuzzy matching algorithms to account for typos and different spellings. We used matching algorithms (`-matchit-` and `-reclink-` in Stata) and self-created commands to account for typos and different spellings (Bassok, Markowitz, et al., 2021).

We first matched names within a school year (i.e., fall and spring observations). If we observed a teacher within the same classroom and year that had the same first name but different last name (or the same last name but different first names), we considered this teacher a match. We then used *both* versions of the teacher's name when conducting the year-to-year match, which is the focus of the current analysis. These rules were designed to avoid overstating teacher turnover.

To create our main measures of turnover, we first matched teachers within programs. If we observed a teacher with the same name (or accepted variants as described above) at a center from one academic year to the next (in either fall or spring), we defined that teacher as not

leaving their program, even if the same name also appears outside of the program. A teacher is thus classified as having turned over if their name does not appear in any classroom observations the following academic year, even if that teacher later returns to the center in future years.

### **Limitations of Match Process**

LDOE policy directs classroom observers to observe the classroom's lead teacher and observers are asked to enter the name of the lead teacher in the classroom. Occasionally they enter two names, which *may* represent two co-lead teachers in the same class but may also represent a lead and assistant teacher combination. We are unable to detect whether a name included in the dataset represents a lead or assistant teacher and assume all entered names are lead teachers. This assumption introduces some error to our turnover estimates because assistant teachers may be more mobile than lead teachers; however, we expect the magnitude of this error to be small.

Because the data focuses on lead teachers in the classroom, it is possible that some teachers we classified as turning over may not have left their program, if these teachers move into a non-teaching position (to assistant director, for example) or to an infant classroom. These teachers would inadvertently be classified as having turned over, because we would no longer see the teacher in the classroom observation records.

### APPENDIX C: CENTER QUALITY RATINGS IN LOUISIANA

In Louisiana, CLASS observations are collected by local raters who have been trained and demonstrate reliability on the CLASS tools in alignment with the guidelines established by the developers of CLASS. Observers score classrooms using a protocol established by the CLASS developers. They observe teachers across four 20-minute cycles, in which they observe for a portion of time and then score the classrooms from 1 to 7 on several quality dimensions. These cycles are averaged together to create single dimension scores for each observation.

As shown in Tables 1 and 2 below, classrooms serving toddlers (children aged 15 to 36 months) are rated on eight dimensions, which are aggregated to two domains, and classrooms serving preschoolers (children aged 3 to 5 years) are rated on ten dimensions, which are aggregated to three domains.

**Table 1: Domains and Dimensions for Classrooms Serving Toddlers**

<b>Domain</b>	<b>Dimensions</b>
<b>Emotional and Behavioral Support</b>	Positive Climate
	Negative Climate*
	Teacher Sensitivity
	Regard for Child Perspectives
	Behavior Guidance
<b>Engaged Support for Learning</b>	Facilitation of Learning Development
	Quality of Feedback
	Language Modeling

\*Although negative climate is typically included in the emotional support domain for toddler classrooms, as well as in the overall score, Louisiana does not include negative climate in its ratings calculations.

**Table 2: Domains and Dimensions for Classrooms Serving Preschoolers**

<b>Domain</b>	<b>Dimensions</b>
<b>Emotional Support</b>	Positive Climate
	Negative Climate*
	Teacher Sensitivity
	Regard for Student Perspectives
<b>Classroom Organization</b>	Behavior Management
	Productivity
	Instructional Learning Formats
<b>Instructional Support</b>	Concept Development
	Quality of Feedback
	Language Modeling

\*Although negative climate is typically included in the emotional support domain for preschool classrooms, as well as in the overall score, Louisiana does not include negative climate in its ratings calculations.

### **Dimension Score Replacement**

If a classroom has been rated by both a local and third-party observer during a semester, those ratings are compared. First, domain scores for local and third-party observers are calculated separately. If the local observation domain score is more than one point different from the third-party domain score, the dimension scores of the third-party observation replace the dimension scores of the local observation for that domain. Then, the third-party dimension scores are considered the raw data, and the local dimension scores (for that particular domain) are no longer used. Otherwise, the third-party dimension scores are used only if there is no local observation of the classroom that semester.

### **Overall Score**

To calculate the overall score, dimension scores (not domain scores) are averaged; thus, overall scores range from 1 to 7 points. Negative climate is not included in overall score calculations. If local dimension scores were replaced by third-party scores, those third-party scores are used instead in calculations.