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#### **Short Communication**

# Early feeding in child care in the United States: Are state regulations supporting breastfeeding?



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#### ARTICLE INFO

#### Keywords: Breastfeeding Child care Regulations Policy Infant feeding

#### ABSTRACT

Most women in the US are not meeting the recommendation of exclusively breastfeeding their infants for the first 6 months of life. The child care environment can be especially influential in a mother's ability to continue breastfeeding after returning to employment. For this study, we reviewed child care regulations related to breastfeeding for centers and homes in all 50 states and the District of Colombia in late 2016, and compared them to 5 national standards. We coded regulations as either not meeting, partially meeting, or fully meeting each standard. We assessed correlations between number of regulations consistent with standards and 1) geographic census region and 2) last year of update. This study provides an update to a previous review conducted in 2012. No state met all 5 of the included standards, and only 2 states for centers and 1 state for homes at least partially met 4 of the 5 standards. More states had regulations consistent with standards encouraging general support for breastfeeding and requiring a designated place for mothers to breastfeed onsite. Number of regulations consistent with standards was associated with geographic census region, but not last year of update. States in the South had a greater number of regulations consistent with standards and states in the West had the fewest number of regulations consistent with standards. Overall support for breastfeeding at the state child care regulation level continues to be insufficient. States should improve child care regulations to include greater support for breastfeeding in child care facilities.

#### 1. Introduction

The World Health Organization (WHO) recommends exclusive breastfeeding for the first 6 months of life (World Health Organization, 2003). In the US, only 22% of infants are exclusively breastfed (Centers for Disease Control and Prevention, 2016). Breastfeeding is important for optimum health and development in infancy, and has been shown to affect a child's weight and BMI (World Health Organization, 2003). Although still under debate, there is evidence of an association between shorter duration of breastfeeding and no breastfeeding and a greater likelihood of childhood obesity (Sun et al., 2016; Wallby et al., 2017; Wang et al., 2017).

The child care environment may be especially influential in a mother's decision to breastfeed her child. For example, women whose infants are regularly in non-parental care, are less likely to initiate breastfeeding, and those who initiate, are more likely to breastfeed for shorter durations than those whose infants are in maternal care (Bai et al., 2015; Kim and Peterson, 2008; Pearce et al., 2012). Moreover, due to a lack of adequate, paid maternity leave in the US, a large

proportion of mothers return to work within the first months postpartum (United States Department of Labor, 2015); thus necessitating the use of non-parental care. There are two main types of regulated non-parental child care facilities in the US: child care centers ("centers") and family child care homes ("homes"). Whereas centers care for a greater number of children and typically operate out of a facility that is not a primary residence, homes often care for a smaller number of children and typically operate out of the owner's primary residence.

State licensing regulations provide comprehensive requirements for all child care facilities. These regulations dictate how child care facilities and providers approach breastfeeding, and ensure consistency in care across facilities. These regulations may help encourage or hinder continued breastfeeding. A previous review of state child care regulations found that few states have regulations supporting a woman's ability to continue to breastfeed her infant in child care (Benjamin Neelon et al., 2015). In this paper, we provide a 5-year update to that review for all 50 states and the District of Colombia.

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**Table 1**National standards supporting breastfeeding in child care for all 50 states and DC, 2016.

Caring for our children standards to support breastfeeding
Encourage and support breastfeeding<sup>a</sup>
Have a designated place for mothers to breastfeed<sup>a</sup>
Solid foods should not be introduced before infants are 4 months of age, but preferably 6 months<sup>a</sup>

Infant formula should not be fed to breastfed infant without parent permission<sup>a</sup>

Caregivers/teachers should discuss breastfed infant's feeding patterns with parents because frequency of breastfeeding at home can vary<sup>b</sup>

- <sup>a</sup> Standard included in 2012 review.
- <sup>b</sup> Standard newly included in 2016/2017 review.

#### 2. Methods

#### 2.1. Regulations review

We collected data on child care regulations for all 50 states and the District of Columbia ("states") from a publicly available website maintained by the National Resource Center for Health and Safety in Child Care. We then compared these state regulations to national standards set by Caring for our Children (National Resource Center for Health and Safety in Child Care and Early Education, 2011), a partnership between the American Academy of Pediatrics, American Public Health Association, and the National Resource Center for Health and Safety in Child Care and Early Education. We identified 5 standards as being supportive of breastfeeding practices in child care settings, of which 4 were the same ones examined in the 2012 study (Table 1). In late 2016, two researchers independently reviewed child care regulations for both centers and homes. Reviewers recorded regulations as either 0 = not meeting each standard; 1 = partially meeting each standard; or 2 = fully meeting each standard. Inter-rater reliability ranged from 90.6% to 96.2% for standards for centers and 91.1% to 98.0% for standards for homes. When there was a discrepancy between reviewer coding, the reviewers and principle investigator discussed and reconciled any differences.

#### 2.2. Statistical analysis

We calculated the number of states with regulations partially and fully consistent with standards for centers and homes and computed each state's mean score and standard deviation (SD) for all 5 standards. We classified states as being in one of the 4 overall geographic census regions (South, Northeast, Midwest, and West), and used Cochran Mantel Haenszel trend tests to estimate correlations between census region and number of regulations for each state. The Cochran Mantel Haenszel test treats the number of regulations as ordered columns in the contingency table formed by the cross-tabulation of region and number of regulations. By taking this ordering into account, the test is more powerful than general chi-square tests. We also used Cochran Mantel Haenszel trend tests to determine potential associations between having an update within the past 5 years (since the previous review) and number of regulations consistent with standards. We used Spearman correlations to estimate the association between continuous year of update and number of regulations. We conducted all analysis using SAS 9.4 (SAS Institute, Inc., Cary, North Carolina).

#### 3. Results

The highest score that centers and homes could earn was a 10. The mean (SD) score for centers was 1.9 (1.7) and for homes was 1.3 (1.5). No state had regulations consistent with all 5 standards (Table 2). However, 2 states (DE and NC) had regulations for centers and 1 state (NC) had regulations for homes that were at least partially consistent with 4 of the 5 standards. Ten states had no regulations consistent with any of the standards for centers, and 19 states had no regulations

consistent with any of the standards for homes.

The two most common standards found among state regulations were whether the center or home supported breastfeeding (19 states for centers; 10 states for homes) or encouraged a delay of introduction to solids (33 states for centers; 24 states for homes). Twelve states (centers) and 7 states (homes) had regulations requiring a designated place for mothers to breastfeed; 8 states (centers) and 8 states (homes) had regulations requiring parental permission to feed formula to breastfed infants. Only 3 states (centers) and 2 states (homes) had regulations encouraging open communication with parents about breastfeeding routines.

The majority of states (40 for centers; 36 for homes) had updated their regulations in the last 5 years. However, the number of states with regulations consistent with standards was not correlated with last year of update for centers (p=0.17) or homes (p=0.15). Centers in states in the south had the most regulations consistent with standards (2.2 (1.3)), and those in the west (0.6 (0.7)) had the fewest regulations consistent with standards. The same was true for homes, with 1.7(1.4) regulations consistent with standards in the south and 0.7(0.9) regulations consistent with standards in the west. The number of regulations consistent with standards was correlated with geographic census region for both centers (p=0.007) and homes (p=0.049).

#### 4. Discussion

In this review of state regulations, we found that support for breastfeeding in child care varies largely by state and type of facility. Overall, child care homes had fewer regulations consistent with standards than child care centers. Whereas, most states had regulations at least partially consistent with at least one of the standards for centers and homes, many states still had no regulations supporting breastfeeding. Most centers had regulations only partially consistent with standards, denoting a need to improve regulations to be more in line with national standards. There was no statistically significant difference between centers and homes in states that had updated their regulations within the past 5 years compared to those that had not updated regulations. However, there was a difference in number of regulations consistent with standards by census region. Thus, states with a similar number of regulations appeared to cluster by geographic region. This finding is consistent with our previous review of state breastfeeding regulations (Benjamin Neelon et al., 2015).

The current review provides an update to the initial regulations review conducted in 2012, while also assessing an additional fifth standard. Consistent with the previous review, centers had more regulations overall compared to homes. This may be due to the operational differences between the two types of facilities. For example, child care homes are typically smaller than centers, which may present a challenge in identifying a designated space for mothers to nurse or express breast milk. Compared to the 2012 review, fewer states now had regulations consistent with all 4 original standards for both centers and homes. This could indicate a shift of priorities among states since the last regulations update. Alternatively, more states in the current review had regulations including a general statement of support for breastfeeding or specifying a designated location for mothers to breastfeed their infants for both centers and homes. This indicates an interest in providing more direct support for mothers who are breastfeeding.

Compared to the previous review, fewer states now had regulations relating to the introduction of solid foods for infants or requiring parental permission to provide formula to an infant. This is important as regulations echoing the recommendations of the American Academy of Pediatrics (AAP) to wait to introduce complementary foods until around 6 months of age may increase the likelihood of exclusive breastfeeding for the first 6 months (American Academy of Pediatrics, 2012). There is evidence suggesting that infants who are exclusively breastfed for 6 months have improved health outcomes compared to those not breastfed, and even to those exclusively breastfed for shorter

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