**Definition and Significance**

Bed-sharing with newborn babies has been a long-embraced practice. Mothers and their families engage in this practice for a variety of reasons. Some of these reasons are centered on convenience, such as ability to have close watch over the baby and ease of breastfeeding. Other reasons are centered on comfort, parent-child bonding, promotion of better sleep, maternal instinct and past practices with other children.¹

Sudden Unexpected Infant Death (SUID) is the sudden or unexpected death of an infant younger than one year of age. Sudden Infant Death Syndrome (SIDS) is a sub-category of SUID describing infant deaths that cannot be explained after a full investigation, including a complete autopsy, examination of the death scene, and review of the child’s clinical history.² In the United States, about 3,500 infants die each year from sleep-related causes, including SIDS and accidental suffocation in bed.³

**American Academy of Pediatrics Safe Sleep Recommendations for Infants**

The American Academy of Pediatrics (AAP) Task Force on SIDS provides recommendations for caregivers to reduce the risk of SUIDs that occur during sleep. These recommendations include placing babies on their back to sleep for every sleep; putting babies to sleep on a firm sleep surface; keeping the sleep area free of soft objects, loose bedding, and blankets; room sharing where infant and adult are sleeping on a separate sleep surfaces; and use of pacifiers.³

**Sleep-Related Deaths in Rhode Island**

Thirty-six infant sleep-related deaths occurred in Rhode Island between 2012 and 2016.⁴ In more than 75% of these cases, the infant was sleeping in an adult bed or someplace other than a crib or bassinette at the time of the injury that led to death. Two-thirds of the infants were sleeping with another person. And, for just more than half of the cases, blankets were in the sleep area.⁴

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**Promoting Safe Sleep Recommendations**

**Birthing Hospitals**

- Standardize safe sleep materials provided to infant caregivers and set up safe sleep environment displays.

**Infant Caregivers**

- Review safe sleep information received at the birthing hospital.
- Share safe sleep information with all infant caregivers (family and babysitters)

**State Agencies**

- Provide safe sleep education and training to professionals serving infants and caregivers enrolled in or participating in State agency programs.
- Increase awareness of safe sleep recommendations through social media and other communication mechanisms.

**Community Based Organizations**

- Consider becoming affiliated with national organizations offering discounted play yards.
Methods
The goal of the Rhode Island Pregnancy Risk Assessment Monitoring System (PRAMS) survey is to improve the health of mothers and infants by providing accurate data to a wide audience. The Rhode Island PRAMS program is conducted through a collaboration between the Rhode Island Department of Health (RIDOH) and the Centers for Disease Control and Prevention (CDC), and surveys about 1,900 recent mothers per year. Responses are weighted to be representative of women who delivered a live infant in Rhode Island from 2012-2015. More information is available on the PRAMS website.5,6

Assessing Safe Sleep Practices
Sleep practices were assessed using the response to the question How often does your new baby sleep in the same bed with you or someone else? Those who responded never were categorized as never bed-sharing while those who responded with always, often, sometimes, or rarely were categorized as bed-sharing with infants. Responses to a related question, In which one position do you most often lay your baby down to sleep now? were also examined and coded supine if the response was back and non-supine if the response was side or stomach. Using STATA statistical analysis software, the prevalence of infant bed-sharing was obtained by demographic characteristics of Rhode Island mothers available in PRAMS data.

Results

Figure 1: Distribution of Responses to Infant Bed-Sharing Among Rhode Island Mothers, PRAMS 2012-2015

Figure 2: Distribution of Responses to Most Frequently Used Infant Sleep Position, PRAMS 2012-2015

Figure 1 and Figure 2 illustrate the distribution of responses to questions about bed-sharing and most frequently used sleep position for infants among Rhode Island mothers. Figure 3 shows that overall, 57% of respondents reported that their babies were sleeping in the same bed with another individual. Maternal age, maternal race/ethnicity, reported household income, marital status, and WIC participation during pregnancy were significantly associated with infant bed-sharing. There were no significant differences in bed-sharing prevalence across maternal education categories. Mothers younger than 20 and those age 20-29 had higher prevalence (62.9% and 61.1% respectively) of bed-sharing compared to mothers who were 30 or older. Mothers who identified as non-Hispanic black and non-Hispanic other were more likely to bed-share. Mothers that reported a household income of less than $29,000 and were not married had a higher prevalence of bed-sharing compared to those who reported being married and had household income of more than $52,000.
Figure 3: Prevalence of Infant Bed Sharing, By Demographic Characteristics, PRAMS, 2012-2015

<table>
<thead>
<tr>
<th>Age**</th>
<th>Maternal Race/ethnicity**</th>
<th>Maternal Education</th>
<th>Household Income**</th>
<th>Marital Status**</th>
<th>WIC during Pregnancy**</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-wide</td>
<td>non-Hispanic white</td>
<td>57.0</td>
<td>64.9</td>
<td>61.1</td>
<td>52.5</td>
</tr>
<tr>
<td>&lt;20</td>
<td>non-Hispanic black</td>
<td>62.9</td>
<td>60.4</td>
<td>76.8</td>
<td>77.7</td>
</tr>
<tr>
<td>20-29</td>
<td>Hispanic</td>
<td>61.1</td>
<td>60.4</td>
<td>76.8</td>
<td>77.7</td>
</tr>
<tr>
<td>30+</td>
<td>Other non-Hispanic</td>
<td>52.5</td>
<td>50.2</td>
<td>58.3</td>
<td>55.7</td>
</tr>
<tr>
<td>&lt;12 years</td>
<td>&lt; $29,000</td>
<td>50.2</td>
<td>58.3</td>
<td>55.7</td>
<td>63.1</td>
</tr>
<tr>
<td>&gt;12 years</td>
<td>$29,001 - $52,000</td>
<td>50.2</td>
<td>58.3</td>
<td>55.7</td>
<td>63.1</td>
</tr>
<tr>
<td>Unmarried</td>
<td>&gt; $52,000</td>
<td>50.2</td>
<td>58.3</td>
<td>55.7</td>
<td>63.1</td>
</tr>
</tbody>
</table>

** p value < 0.05

Figure 4: Prevalence of Infant Bed Sharing, By Potential Risk Factors, PRAMS, 2012-2015

<table>
<thead>
<tr>
<th>Ever breastfed</th>
<th>Supine (back)</th>
<th>Adequate</th>
<th>Easy</th>
<th>Delayed/none</th>
<th>Premature birth **</th>
<th>Postpartum depression**</th>
<th>Home visit after pregnancy**</th>
<th>Tobacco use last trimester</th>
<th>Alcohol use last trimester**</th>
<th>Prenatal care**</th>
<th>Term pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never breastfed</td>
<td>Non-supine</td>
<td>Adequate</td>
<td>Easy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.1</td>
<td>58.7</td>
<td>58.1</td>
<td>64.1</td>
<td>56.0</td>
<td>57.8</td>
<td>63.1</td>
<td>61.4</td>
<td>67.1</td>
<td>68.4</td>
<td>67.9</td>
<td>54.5</td>
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<tr>
<td>53.4</td>
<td>56.1</td>
<td>66.9</td>
<td>61.4</td>
<td>56.6</td>
<td>65.9</td>
<td>66.3</td>
<td>66.3</td>
<td>66.3</td>
<td>66.3</td>
<td>57.1</td>
<td></td>
</tr>
</tbody>
</table>

** p value < 0.05
Figure 4 shows the risk factors significantly associated with bed-sharing. Most significant is the higher prevalence of bed-sharing among mothers who put their babies to sleep on their stomach or on their side (non-supine) position compared to mothers who put their babies to sleep on their back (69.8% and 53.4% respectively). Mothers who ever breastfed had higher prevalence of bed-sharing compared to mothers who never breastfed. Respondents who indicated having poor social support, who experienced post-partum depression symptoms, and had health worker home visits after pregnancy had higher bed-sharing prevalence compared to their counterparts. Mothers who had their first prenatal care visit in their first trimester had lower prevalence of bed-sharing (56.3%) compared to those who had delayed prenatal care or none at all (64.9%). Respondents who reported alcohol use during the last three months of pregnancy had higher prevalence of bed sharing (68.4%) compared to respondents who reported no alcohol use during the last three months of pregnancy (55.9%).

Discussion
The results from this PRAMS analysis will help inform the state’s efforts to reduce infant sleep-related deaths. The Rhode Island State Agency Safe Sleep Work Group formed in 2017 aims to reduce infant sleep-related deaths using several strategies. These strategies include assisting birthing hospitals in obtaining safe sleep educational materials for infant caregiver education prior to hospital discharge, providing safe sleep education and training for professionals serving young children and their caregivers, establishing a mechanism for crib distribution to anyone in need, and raising public awareness of safe sleep recommendations. Given that a higher proportion of infants placed to sleep on their stomach or side are bed-sharing, it is important to include both key messages of Back to sleep and Separate sleep surface in public health education and materials. These findings also identify opportunities for more attention to safe sleep discussions with caregivers especially with women who are breastfeeding, experiencing depression or alcohol use disorder, or receiving WIC or Family Visiting services. Currently, there is no national Healthy People 2020 goal set for bedsharing, but evidence shows that bedsharing increases the risk for infant death. Continuing to monitor PRAMS annual data will assist in evaluating the effectiveness of the State’s current strategies to raise awareness of AAP’s safe-sleep recommendations and reduce the prevalence of infant bed-sharing.

Limitations
Data collected using PRAMS questionnaire relies on self-reporting. Some respondents may have inaccurately reported their practices.

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References