

Safe Sleep for Oregon's Infants

All the moments in an infant's day matter

**A self-study training opportunity
for family serving professionals**



Acknowledgment: Thank you to Oregon’s Early Learning Division (ELD) and specifically Roni Pham and Sydney Traen for your work on the ELD version of the self-study training. Thank you to Anna Stiefvater with Oregon Health Authority (OHA), Public Health, Maternal and Child Health, Chelsea Whitney with Lane County Health and Human Services and Sara Stankey with ODHS Child Welfare in Lane County, for rolling out a safe sleep training in Lane County and sharing your resources. Also, a thank you to the Office of Child Welfare Programs, ODHS Child Welfare professionals, the ODHS Office of Equity and Multicultural Services, Oregon’s Nine Confederated Tribes and the ODHS Tribal Affairs unit with special thanks to Ashley Harding, Joan Bacchus, Native American Rehabilitation Association of the Northwest, the Oregon Foster Parent Association, the Oregon Coalition Against Domestic and Sexual Violence, Oregon domestic violence programs, Oregon substance use disorder treatment programs and those served by these programs, OHA Public Health, ODHS Self Sufficiency professionals, Oregon Parenting Education Collaborative (OPEC) Coordinators, OPEC Parenting Educators and Shauna Tominey Ph.D. with Oregon State University and OPEC.

Primary Audience: Professionals engaging families in the community or the home environment.


Length: Approximately one hour to one and a half hours.

You can get this document in other languages, large print, braille or a format you prefer. Contact Child Welfare’s Child Fatality Prevention and Review Program at CW.Prevention@dhsosha.state.or.us.

Contents

Safe Sleep for Oregon’s Infants	2
Part 1: Understanding sleep-related SUID, risk factors and what risks a parent or caregiver can change	5
What do you already know about safe sleep for infants?	5
What does sleeping comfortably look like for you as an adult?	6
How did you develop your current knowledge or practices around laying an infant down to sleep?	6
Your role in safe sleep	7
Why safe sleep practices are important.....	8
The connection between SUID and safe sleep	8
Multiple risk factors for SIDS ²	10
Reducing outside stressors	11
1: Sleep position:	12
2: Sleep surface and area.....	13
3: Sleep location	17
4: Smoke-free environment.....	19
5: Sleeping temperature	20
Share the message	20
What did you learn about increasing and decreasing the risk of sleep-related deaths?	21

Part 2: Bed sharing and substance use	
Substance use prior to bed sharing	24
What are your attitudes and beliefs about marijuana use?	24
Bed sharing, substance use and infant death	25
Collaborative approach	26
Part 3: Safe sleep conversations with families	
Conversations with families	27
Reducing risk.....	28
How the conversation starts.....	28
Approach to resistance	29
Scenarios	31
Activity: Practice communicating about safe sleep practices.....	33
When an infant’s medical needs change sleep recommendations	35
Part 4: Wrap up.....	36
Professional action plan.....	36
Knowledge check.....	36
Online survey	38
Questions and support.....	38
Resources	38
Thank you for doing your part in keeping Oregon’s infants safe	40
References.....	40



Dear Oregon professionals,

Thank you for your commitment to the safety of Oregon's children. It is important for us all to continue to learn and refresh our knowledge to provide quality services and support to Oregon's families.

Safe sleep practices are critical in preventing child fatalities. This training is an opportunity for professionals working with parents and caregivers to learn about safe sleep practices, how to reduce risk and your role in supporting families to reduce risk to infants in their care.

These organizations and individuals are excited to support infant safe sleep and this effort to achieve consistent messaging across all of Oregon's family serving professionals:

Oregon Association of Hospitals and Health Systems

Oregon Coalition Against Domestic Violence and Sexual Assault

Oregon Department of Education, Early Learning Division

Oregon Department of Human Services, Child Welfare

Oregon Department of Human Services, Self Sufficiency Programs

Oregon Health Authority, Public Health Division

Oregon Medical Board

Oregon Parenting Collaborative

Oregon State Board of Nursing

**Ben Hoffman MD, Medical Director, Tom Sargent Children's Safety Center, OHSU
Doernbecher Children's Hospital**

Joan Bacchus, Native American Rehabilitation Association of the Northwest

**Karen L Ayers, Program and Partnership Manager, Safe Kids Oregon/Oregon Child
Development Coalition**

Safe Sleep for Oregon's Infants

A Self-Study Training Opportunity

How to complete the “Safe Sleep for Oregon’s Infants” self-study:

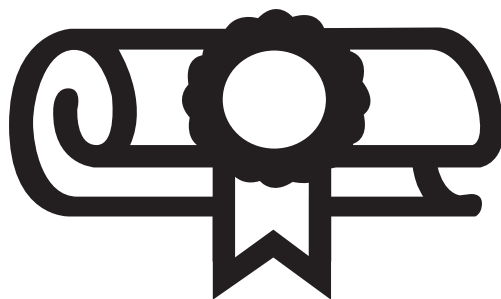
1. Watch the lived experience video at <https://youtu.be/Xx0Yfv42rOg>

This video is on YouTube. The title is “Sudden Infant Death Syndrome (SIDS)” and it is provided by St. Elizabeth Healthcare. The five-minute video is an opportunity to hear from parents who have experienced the sleep-related death of an infant. These individuals present the importance of safe sleep practices. While this video is powerful and moving and can be used as a tool with parents and caregivers, please prioritize your self-care when deciding whether to watch.

2. Read the self-study information and complete all the activities. (Your responses are private.) This document contains the self-study information and related activities.
3. Complete the knowledge check. The knowledge check includes 10 questions and the answer key is in this document.
4. Complete the survey. Once you complete the self-study, there is a link within this document to an online survey and opportunity to provide feedback related to the self-study materials.

Consider printing or saving these materials for future reference. Also consider discussing what you learned with your peers and practicing having conversations about safe sleep.

If you have questions or need assistance with the self-study, please email: CW.Prevention@dhsosha.state.or.us



What to expect:

Each professional who takes this training has a vital role in child safety. Whether a parenting educator, treatment provider, health care professional or other professional engaging families with infants, it is critical for you to know how to keep infants safe and be able to share that knowledge with parents and caregivers.

“Infant” refers to a child between birth and age one. This training will give you valuable information about safe sleep practices for infants in a way that honors families’ unique values and needs.

Many of us come to this topic with our own beliefs and experiences. Be aware the content of the training may evoke different emotions and may be difficult depending on individual’s personal or professional experience. Reflect on your own feelings and those families may have when discussing this topic. Please complete the training at your own pace and engage in needed self-care.

Objectives:

1. Explore how your own experiences and preferences with sleep connect with the recommendations for infant safe sleep practices.
2. Understand your responsibilities around safe sleep as a professional who serves families.
3. Understand sleep-related risks.
4. Understand what actions increase and decrease sleep-related risks.
5. Understand how to talk about safe sleep practices with parents and caregivers.

The sections of this self-study training cover:

Part 1: Understanding sleep-related sudden unexpected infant death (SUID) and how to reduce risk


Part 2: Safe sleep practices and substance use

Part 3: Communicating with parents and caregivers

Part 4: Wrap up: Professional action plan, knowledge check and survey

By the end of this training, you will be able to:

- Articulate your responsibilities regarding safe sleep
- Define sleep-related SUID

- 
- Identify actions that increase and decrease risk factors for SIDS and sleep-related infant deaths
 - Recognize safe and high risk sleep environments, and
 - Communicate safe sleep practices to parents and caregivers with a strength-based, trauma aware approach that honors their values and needs.

Part 1: Understanding sleep-related SUID, risk factors and what risks a parent or caregiver can change

Examine your current knowledge and/or practices



Imagine that you are sitting in a rocking chair holding a baby. The baby hungrily sucks from a breast or bottle while you both enjoy exploring each other's face and eyes. After several burps over your shoulder, you hold them in the crook of your arms again. The baby starts to fall asleep but wakes slightly to make sure you're still there keeping them safe. Finally, the baby falls asleep and you hear their breathing as their chest rises and falls. You get up to lay the baby down to sleep. You are confident that you have made the sleeping area safe and free from all risks.

What do you already know about safe sleep for infants?

Use the space below to write what you did in the story above to make the sleeping space safe and free from all risks.

What does sleeping comfortably look like for you as an adult?

Imagine that it is the end of a long day. All you want is to get comfortable and have a good sleep. Use the space below to write what you have done to make this happen for you. What comforts have you prepared to help you get the sleep you so need and want? What makes it so comfortable? For example, think about your sleep position, bedding, pillows and clothes. What gets you ready for sleep?

In this training you will learn that adult sleeping behaviors and comfort needs are different from infant sleeping needs. Some adult sleep comforts can be risky to an infant's safety. This doesn't mean infants will be uncomfortable; it means they will sleep safely

How did you develop your current knowledge or practices around laying an infant down to sleep?

As a professional who serves families, it is important to know research-supported best practices to safely lay an infant down to sleep, whether for a nap or for the night. People often rely on experiences, knowledge, culture, friends and family to know how to care for an infant. Use the space below to write how you developed your current knowledge or practices around laying an infant down to sleep.




Your role in safe sleep

Professionals who serve families may interact with the families they serve in their home environments, virtually, on the phone or in the community. Their responsibilities often include sharing information about parenting practices that support children's safety, health and well-being. You are in a unique position to talk to parents and caregivers about safe sleep

As part of an intake, evaluation or during ongoing work with a family, consider:

1. Observing the infant sleep environment when possible or asking for a description
2. Asking about sleep practices the family uses anytime the infant is laid down to sleep
3. Providing education on safe sleep recommendations (consider providing both written information and a verbal explanation), and
4. Helping the family problem solve to reduce risk.

Many people have strongly held beliefs about sleep practices, but you are still encouraged to make sure parents and caregivers are aware of safe sleep practices. For many families, discussions about how to reduce risk for their infants will be more effective in changing their practices than simply giving them written material.

Professionals who serve families must be equipped to share the most up-to-date, research-supported practices with families caring for an infant. This training uses current information and research from multiples sources. Please carefully read the information and complete the activities to test your knowledge along the way.

Why safe sleep practices are important

You touch the lives of children and their families in many important ways. Safe sleep practices are critical to reducing the risk of sleep-related infant death. Not following these practices could have a devastating outcome. Helping parents and caregivers understand the importance of safe sleep practices and supporting these practices as part of a family's routine may save lives.

The connection between SUID and safe sleep

Once a child reaches one month of age, the most common cause of death is Sudden Unexplained Infant Death (SUID).

The three commonly reported types of SUID are:

- Sudden Infant Death Syndrome (SIDS)
- Accidental suffocation and strangulation in bed (ASSB), and
- Other ill-defined or unspecified causes

Here are the definitions of SUID and SIDS:

Sudden Unexplained Infant Death (SUID)	Sudden Infant Death Syndrome (SIDS) (a type of SUID)
SUID is the sudden and unexpected death of a seemingly healthy infant under 12 months of age in which cause of death is not immediately obvious.	SIDS is a SUID death that is still unexplained after a death scene investigation, autopsy and review of the infant's medical history. ¹

The goal of safe sleep practices is to reduce sleep-related SIDS deaths and ASSB deaths. Infant deaths in a sleep environment that are not considered SIDS may be caused by suffocation or strangulation and fall under the category ASSB, so it is important to understand both.

Mechanisms that lead to accidental suffocation include the following:

- **Suffocation by soft bedding**
For example, when a pillow or waterbed mattress covers an infant's nose and mouth.
- **Overlay**
For example, when another person rolls on top of or against the infant while sleeping.

- **Wedging or entrapment**

For example, when an infant is wedged between two objects, such as a mattress and wall, bed frame or furniture.

- **Strangulation**

For example, when an infant's head and neck become caught between crib railings.

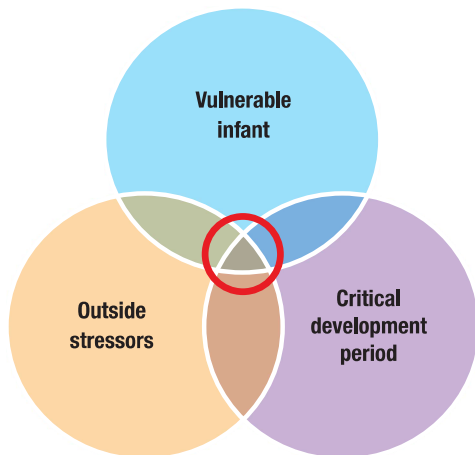
Now for the good news...

The good news is, a parent or caregiver can take actions to lower the risk of SIDS and in most cases prevent ASSB. Most of these actions relate to the infant's sleep environment. Understanding how safe sleep reduces risks for Sudden Infant Death Syndrome (SIDS) and other sleep-related deaths is key to engaging parents and caregivers in conversations and planning that may save a child's life.



Before going over ways to reduce risk, first let's learn more about SIDS and the risk factors a parent or caregiver can and can't change..

Multiple risk factors for SIDS²



There is no one definitive cause of SIDS. This diagram shows how three common risk factors interact. When an infant is experiencing risk factors from all the three circles, as shown in the center area of the diagram, they are at a much higher risk for SIDS. Although these factors contribute to higher risk, all infants are at risk.

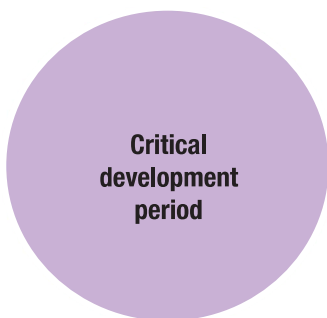
Let's look at each of the risk categories in the diagram individually.



Vulnerable infant


All infants are vulnerable to SIDS. Some factors can make an infant more vulnerable. These can be unknown to parents, caregivers and health care providers. Risk factors include:

- Genetic conditions passed down from biological parents
- Unknown physical developmental issues, and
- Issues with brain development.



Critical development period

Infants' brains grow and develop a lot in the first six months of life. They are at highest risk for SIDS during this time because the part of the brain that allows them to wake up when their oxygen level is too low or their carbon dioxide level is too high is still developing. The muscles in the neck and core are also not fully developed at this time. This means the infant can't roll over or pick up their head if their airway is blocked.



Outside stressors

Outside stressors

The only risk factors that a parent or caregiver has an ability to change are in the “**outside stressors**” category. These are called “outside stressors” because they occur outside the infant’s body. Some examples of outside stressors include:

- Bumper pads
- Too much clothing
- Loose bedding
- Being placed on their stomach, and
- Exposure to cigarette smoke.

Professionals who serve families have a role in helping parents and caregivers reduce these risks. Reducing **outside stressors** is best for an infant’s health and safety.

Reducing outside stressors



Knowing the outside stressors and how to reduce the number of outside stressors is critical to having informed, constructive conversations with reporters about safe sleep practices.

The outside stressors focused on in this training are the 5 safe sleep categories Child Welfare professionals must evaluate and discuss.

1. Sleep position
2. Sleep surface and area
3. Sleep location
4. Smoke free environment
5. Sleep temperature

1: Sleep position:

Decreased risk	Increased risk
The infant is placed on their back to sleep.	The infant is placed on their stomach or side to sleep.

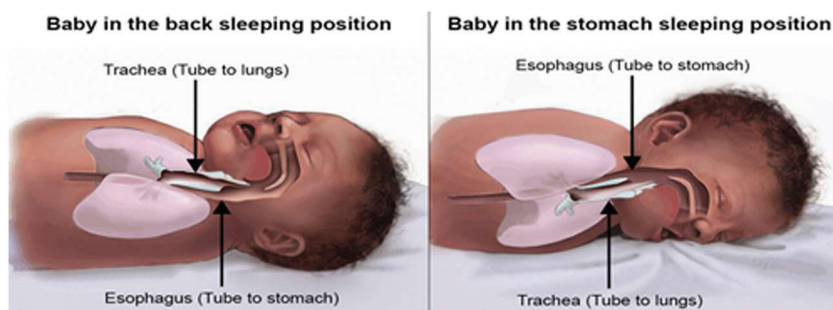
More information about sleep position:

- Placing an infant on their back is the most effective way parents and caregivers can reduce the risk of SIDS.

If an infant is a stomach or side sleeper at home, the risk for SIDS is much higher. The side position is just as dangerous as placing the infant on their stomach because the infant can accidentally roll to their stomach. If an infant is put to sleep on their back and rolls on their own to their stomach, in this instance, it is not necessary to change their position. If a swaddled infant is able to roll, it is important to stop swaddling altogether.

- Infants love consistency. In fact, infants who usually sleep on their backs but are then placed to sleep on their stomachs, like for a nap, are at very high risk for SIDS.³
- **Tummy time** (placing your awake infant on their stomach) is important. Infants need tummy time to develop different muscles and to get a good view of their world. However, tummy time should only take place when the infant is awake and supervised.⁴ If an infant falls asleep during tummy time, they should be placed on a safe sleep surface on their back.
- Swaddled infants may roll more easily from back to stomach and can't use their arms for support. Swaddled infants have an increased risk of death if they are placed or roll onto their stomach. If swaddling is used, infants should always be placed on their back. When an infant exhibits signs of attempting to roll, swaddling should no longer be used. To be safe, stopping swaddling by two months of age is recommended.⁵
- Infants are less likely to choke on their backs.

It used to be a common belief that back sleeping increases the chance of choking if an infant vomits while they are sleeping. This is not true. Infants can clear fluids better when they are on their backs. When an infant is sleeping on their back, the trachea (airway that goes to the lungs) lies on top of the esophagus (tube that goes to the stomach). When an infant spits up, gravity will keep the spit-up in the esophagus and it will either come out of the mouth or the infant will swallow it. Either way, the trachea is protected when the infant is on their back. When an infant is sleeping on their stomach, any spit-up will pool at the opening of the trachea. This makes it easier for the infant to choke from breathing fluid into their lungs.



Because of misinformation about back sleeping, you may encounter new parents who have heard from grandparents and others that their infant slept on their stomach. Many infants who sleep on their stomach never experience SIDS. However, the risk of SIDS is far greater for those infants. This is part of the conversation you will have with parents and caregivers about how, over time, research has informed new best practices. Seat belts are a good example to use; they were uncommon in cars until 1958 and then their use was inconsistent. Many children were not harmed by riding in cars with no seat belt, but some experienced devastating consequences. So, while many of us survived never wearing a seat belt, we wear them now. We now know that if we were in a car crash, our chances of surviving are much greater if we are wearing a seat belt.

Since the Back to Sleep campaign started in 1992, there has been a 50 % reduction in infant deaths.

2: Sleep surface and area

Decreased risk	Increased risk
<p>The infant sleeps on a firm, flat surface (for example, a safety-approved bassinet, crib or Pack N' Play).</p> <p>The firm surface, even a Pack 'N Play, has a fitted sheet and no other soft bedding or loose materials.</p>	<p>The infant sleeps on soft surface or surface that is not flat (for example, a couch, armchair, adult mattress such as memory foam, mattress topper, waterbed or car seat).</p> <p>There is soft bedding or loose materials in the sleep area (for example pillows, toys, stuffed animals, blankets or bumper pads).</p>

Sleep surfaces can vary depending on cultural tradition, space and mobility. The most important thing is to put an infant to sleep on a firm, flat surface. The most common firm, flat surfaces are bassinets, cribs or Pack N' Plays.

Below are examples of firm, flat sleep surfaces other than bassinets, cribs or Pack N' Plays that may be used:



Basket



Box or carton



Drawer



Washtub

Below are examples of traditional tribal sleep surfaces:



Umatilla Tribe style cradleboard⁷



Navajo Tribe style cradleboard⁸



First Nations and Woodlands Tribes moss bag⁹

Many traditional sleep surfaces have been around for a long time. Some of the safest traditional sleep surfaces come from American Indian/Alaska Native (AI/AN) or First Nations (FN) traditions. If you are caring for an AI/AN or FN child, some traditional sleep surfaces may be available. These include:

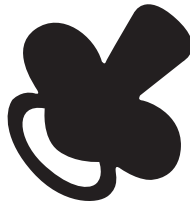
- Cradleboards or baskets, which are common across many AI/AN tribes, and
- Moss bags, which are common among Canadian First Nations and Woodlands AI/AN Tribes.

American Indian and Alaska Native communities may have originated the concept of “Back to Sleep” with the use of traditional infant sleep devices. Although the specific design of the sleep devices differ between Tribes, the infant is placed on their back and swaddled into place in a safe and secure environment. Rates of infant death and SIDS are high in many American Indian or Alaska Native communities, and using these traditional methods is a good way to keep infants safe. If you are unaware of specific Tribal safe sleep practices, contact the infant’s Tribe to learn more. Understanding how to use traditional Tribal sleep devices is critical to keeping the infant safe.

No matter what container or device is used, the surface should be firm and flat. If the sleep surface can’t accommodate a snug fitting mattress, it is safer to place the infant on the firm, uncovered surface than it is to use a pillow or other soft or loose surface.

Infants who sleep on soft surfaces or are placed with soft, squishy objects are at risk for SIDS or suffocation. Examples of soft surfaces or objects include:

- Soft mattresses
- Pillows
- Blankets, comforters and quilts
- Other loose bedding (such as non-fitted sheets)
- Sheepskins
- Bumper pads
- Stuffed toys, and
- Infant positioners (products designed to keep an infant in a certain position, such as wedges, padded tubes or mats with side bolsters).



More information about sleep surface and area:

- Sitting or reclining devices, such as car seats, strollers, swings, infant carriers and infant slings, are not recommended for routine or unsupervised infant sleep. Infants in these sitting devices may be able to move into a slouched forward position that can cut off their airway. Even using the straps included in the device does not prevent this.
- Soft objects and loose bedding can obstruct an infant’s nose and mouth.
- It is **not** recommended to put an infant to sleep with a bottle propped in their mouth.
 - It is a choking hazard and can lead to bottle rot as teeth come in.¹⁰
 - The items typically used to prop a bottle (such as blankets or stuffed animals) pose a suffocation risk.¹¹
- Infant sleep clothing, such as a wearable blanket or sleep sack, is an alternative to blankets.
- Swaddling can be an effective technique to help calm infants, but if the infant breaks free of the swaddle, the blanket can then be available to cover their face and block their airway. However, it is also important to make sure the blanket is not too tight. The infant’s hips and legs should be able to move freely, and two or three fingers should fit between the infant’s chest and the swaddling blanket. Also, swaddling may decrease an infant’s arousal, so that it’s harder for them to wake up. According to HealthyChildren.org, “We know that decreased arousal can be a problem and may be one of the main reasons that babies (infants) die of SIDS.”⁵
- Bumper pads are not necessary to prevent head entrapment because of new safety standards for crib slats.
- Remove teething necklaces or jewelry when laying an infant down to sleep.
- Although the reason is unclear, studies have reported pacifiers may reduce the risk of SIDS. Offering a pacifier to infants is recommended. Pacifiers help infants wake from sleep more easily, which is important if their breathing becomes blocked. A pacifier falling out of the infant’s mouth and on to the sleep surface is ok.
- If a pacifier is used when placing the infant for sleep, it does not need to be reinserted once the infant falls asleep. If the infant refuses the pacifier, they should not be forced to take it.
- It is recommended that the crib, bassinet or portable crib follow the safety standards of the Consumer Product Safety Commission (CPSC). See the “Resources” section in Part 4 of this training and click on the CPSC link for more information on safety standards.

3: Sleep location

Decreased risk	Increased risk
Room sharing The crib or bassinet is close to parent or caregiver	The infant shares a sleep surface with caregiver, non-primary caregiver, siblings, other person or pets The crib or sleep surface is located in a separate room

Room sharing versus bed sharing

Before discussing room sharing and bed sharing, here are the definitions of each of these terms:

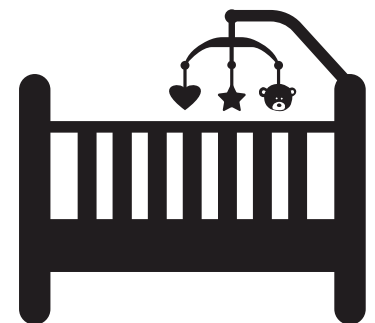
Room sharing refers to an infant sleeping in the same room as a caregiver or other household members but not sharing the same surface such as a bed, couch, chair or futon.

Bed sharing refers to an infant and one or more adults or children sleeping together on any surface, not necessarily a bed; they could be sharing another surface, such as a couch, chair or futon.

It is recommended that infants sleep in the parents' or caregivers' room, close to the parents' or caregivers' bed but on a separate surface designed for infants. The American Academy of Pediatrics (AAP) guidelines are designed to promote breast feeding, bonding and safety. Keeping the infant close to the parent or caregiver supports these goals.

The AAP recommendations acknowledge that parents frequently fall asleep while feeding an infant. Evidence suggests it is less hazardous to fall asleep with the infant in the adult bed than on a sofa or armchair. However, adult beds are associated with a lot of risk factors, such as soft, pillow-top mattresses, blankets and pillows. Infants are not coordinated enough to move a blanket or pillow off their face.

Bed sharing is not recommended. Bed sharing increases the risk of suffocation, entrapment and other sleep-related causes of infant death. An adult bed is not designed for infants, and there are no safety standards for adult beds.



Although bed sharing is **not** recommended by the AAP, there are many rational reasons why a parent chooses to bed share:

- It encourages breastfeeding by making nighttime breastfeeding more convenient.
- It makes it easier for a nursing mother to get her sleep cycle in sync with her infant's.
- It helps infants fall asleep more easily, especially during their first few months and when they wake up in the middle of the night.
- It helps infants get more nighttime sleep (because they awaken more with a shorter feeding time, which can add up to a greater amount of sleep throughout the night).
- It helps parents regain closeness with their infant after being separated from their infant during the workday.
- It is a common practice within the family's culture.
- The parent or caregiver had a positive experience with bed sharing with other children.
- If a parent or caregiver has experienced domestic violence, bed sharing may occur:
 - Because the abusive partner requires the infant to be in the bed
 - To protect an infant from an abusive partner
 - To be prepared to leave quickly, or
 - As a coping mechanism after fleeing an unsafe situation.

Oregon Health Authority and AAP recommend precautions to consider if, contrary to recommendations, a parent or caregiver chooses to have their infant sleep in their adult bed:

- Wait until the infant is older than four months old.
- Remove pillows, quilts or comforters.
- Do not have pets or other children in the bed at the same time as the infant.
- Avoid sleeping on soft surfaces such as a waterbed, mattress topper, sofa, couch or armchair.
- Avoid bed sharing if the adult is actively smoking.
- Avoid bed sharing if the adult has consumed alcohol, used substances that may impair them, taken sleep aids or if they are overly exhausted and there is a chance that they will not awake in an emergency. This will be addressed with more detail in the next section

More information about sleep location:

- Exhaustion is an inevitable part of parenting an infant. Support the parent or caregiver by developing a plan to lay the infant down to sleep safely when managing exhaustion. A plan may involve other adults in the home. When planning, always listen to what the

caregiver says is doable. Especially when there are no other adults in the home, consider a plan involving a babysitter, respite provider or other alternative caregiver providing scheduled or as-needed respite to allow the parent or caregiver to get uninterrupted sleep.

- Room sharing is safer than bed sharing or solitary sleeping in a separate room.
- Placing the crib or bassinet next to the caregiver's bed can make nighttime feedings easier.

4: Smoke-free environment

Decreased risk	Increased risk
The infant is in a smoke-free environment.	The infant is exposed to secondhand or thirdhand smoke.

Secondhand smoke effect

Secondhand smoke is smoke inhaled from tobacco being smoked by others. This happens when you are in an enclosed space or sitting near someone who is smoking. Exposure to secondhand smoke significantly increases an infant's chances of dying from SIDS.¹³ Children exposed to secondhand smoke are also at higher risk of other diseases, such as asthma, the common cold and other viruses.

Thirdhand smoke effect

Thirdhand smoke is tobacco smoke toxins that remain after the cigarette is put out. Thirdhand smoke toxins can build up on the smoker's hair, clothing and other surfaces. The toxins in smoke can cause harm to an infant's developing brain.

To reduce infants' risk of exposure to thirdhand smoke, parents and caregivers can cover their clothing with a jacket or sweater, pull back long hair or wear a hat to cover their hair while smoking. After smoking, it is important to wash their hands and face and change any clothing that will come into direct contact with the infant. This will protect the infant's vulnerable developing body systems.

5: Sleeping temperature

Decreased risk	Increased risk
<p>The room temperature is comfortable for a lightly clothed adult.</p> <p>The infant is in a maximum of one layer more than would typically be comfortable for an adult to wear.</p>	<p>The room temperature is too warm or uncomfortable for an adult.</p> <p>The infant is overdressed or underdressed for the temperature of the room.</p>

Overheating increases sleep-related SUID risk. Overheated infants are more likely to go into a deep sleep that might be more difficult for them to wake up from. Signs that an infant is too hot include sweating, damp hair, flushed cheeks, heat rash and rapid breathing.



Many parents and caregivers are concerned that an infant will get cold without a blanket. Blankets can increase the risk of SIDS and accidental suffocation. Instead of a blanket, use the general guideline of dressing an infant in clothes, sleepers or a nonrestrictive sleep sack that provide one layer more than would typically be comfortable for an adult. Healthy infants do a good job regulating their own body temperature. Extreme temperatures, such as sleeping outdoors in winter, may require additional layers. If adding layers, pay special attention to the signs the infant is too hot.

Overheating may also occur if an infant is swaddled. If caregivers swaddle, including swaddling for a cradleboard or other traditional Tribal safe sleep practice, it is important to consider what else the infant is wearing and the temperature where the infant is sleeping.

Share the message

The parents and caregivers of infants look to you for parenting guidance and support. There are many opportunities when working with families to share information about safe sleep practices. It is important to make sure the information is shared with all the individuals in a family who have a role in laying the infant down to sleep. Encourage parents and caregivers to share this information with family members, friends and others who also provide care for their infant, including babysitters and childcare providers.



For American Indian/Alaska Native families, provide information in a way that does not confront or question the family's knowledge about Tribal traditions. Consider engaging elders from Tribal communities and do so in a manner that does not question their authority as important community members with knowledge and expertise that could benefit families. Learn about traditions that are important to families. Ask for guidance about how to support families within Tribal communities to make decisions that both honor their values and traditions and follow research-supported practices.

What did you learn about increasing and decreasing the risk of sleep-related deaths?

Activity 1: Identify which actions in the list increase risk of SIDS:

1. Placing the infant on their side to sleep
2. Placing only one stuffed animal in the crib
3. Wearing a hat to cover your hair when smoking
4. Swaddling when the infant can roll
5. Placing no blankets at all in the crib

Answers: 1, 2 and 4 increase risk

Activity 2: If you were with a family and saw the sleep practices in the photos below, would you recognize the outside stressors and know what to recommend the family do to reduce risk?

View the photos below and write your answers and observations in the space provided for each photo.



Does the above picture show any safe sleep practices?

Yes

No

How would you reduce risk?

List any risks or protective factors you see:



Does the above picture show any safe sleep practices?

Yes

No

How would you reduce risk?

List any risks or protective factors you see:



Does the above picture show any safe sleep practices? <input type="checkbox"/> Yes <input type="checkbox"/> No	How would you reduce risk?
List any risks or protective factors you see:	



Does the above picture show any safe sleep practices? <input type="checkbox"/> Yes <input type="checkbox"/> No	How would you reduce risk?
List any risks or protective factors you see:	

Part 2: Bed sharing and substance use

Substance use prior to bed sharing



As you learned in Part 1, bed sharing increases the risk of sleep-related infant death. While the AAP recommends avoiding bed sharing, some parents and caregivers will choose to continue to share a sleep surface with their infant for a variety of reasons. In this case, engage in conversations as much as possible and partner with the parent or caregiver to develop a plan to reduce risks. A parent may continue to bed share, but they may agree to remove the comforter from the bed and have the other adults or children sleep elsewhere. Harm reduction is an important approach when talking to families about infant safe sleep.

“Substance use” includes many legal or illegal drugs with potential for misuse, including controlled substances, prescription medications, over-the counter medications and alcohol. However, right now let’s look at marijuana specifically.

What are your attitudes and beliefs about marijuana use?

Marijuana use is common and legal in Oregon. As a professional who serves families, it is important to examine your own beliefs about marijuana use and parenting to make sure personal bias does not interfere with how you provide parental support and education. In the space below, write your understanding of how marijuana use while parenting may put an infant at risk.

Bed sharing, substance use and infant death

Marijuana, alcohol and prescribed substances are legal in Oregon. The form, method or legality of a substance does not make its effects on parental impairment and child safety less dangerous. Whether a substance is legal or illegal, prescribed or not prescribed, is not the issue. The focus is on the affect the substance has on the parent or caregiver.

When a parent uses sedating substances such as marijuana, it increases the probability that they the will go to sleep faster and sleep harder and deeper than usual. Being sedated or impaired can make a parent or caregiver unresponsive to an infant. The parent may not be aware they have rolled onto the infant and may not feel the infant or hear the infant's distress sounds. According to BASIS (Baby Sleep Info Source):

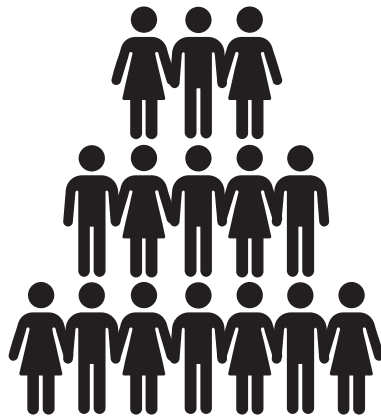
The most recent studies have shown that most bed sharing deaths happen when an adult sleeping with a baby (infant) has been smoking, drinking alcohol, or taking drugs (illegal or over the counter meds) that make them sleep deeply.¹⁴

For this reason, it is even more crucial to have conversations, provide information and make plans for infant safe sleep practices with families where parents or caregivers use substances. There is a clear standard here. It is unsafe for a parent or caregiver to bring an infant into their bed if they have used any substance that could interfere with their normal sleep patterns. If the parent or caregiver is impaired and plans to share a sleep surface with their infant, support the family in making an alternative plan. This support may include reaching out to other individuals in the family or community. If all attempts are unsuccessful, consider whether it is a mandatory report of child abuse.

Collaborative approach

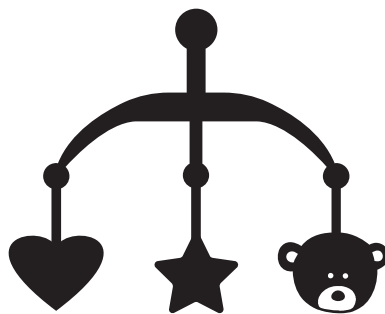
Be clear about risks with parents. If a parent or caregiver is using a substance that can impair them, then support them in developing a plan to ensure that a safe, unimpaired individual is caring for the infant.

Consider including other community partners in these conversations with the family, such as experts on substance use disorders, safe sleep or infant health, or culturally specific providers or supports. Collaborating with a Self Sufficiency Program family coach, a nurse or a Tribal member will allow for a different voice and another perspective. Also, consider connecting the family with providers they trust and who would have credibility on the topic, such as their pediatrician. Studies have repeatedly shown that hearing messages from multiple sources, multiple times increases likely acceptance and implementation of safe sleep behaviors.¹⁵



Part 3: Safe sleep conversations with families

Conversations with families



When talking with families about safe sleep, they may express concerns or share misconceptions about safe sleep practices. They may also share ideas or opinions on topic that you haven't thought of before. Parents or caregivers may resist engaging in some safe sleep practices because they are committed to a sleep practice that is not recommended.

It is the role of professionals who serve families to not only educate families, but also to engage in authentic conversations with families about safe sleep. These conversations must respect and engage with their lived experiences and opinions. They must also acknowledge and elevate them as experts in and advocates for their children's health.

Think about safe sleep improvements in terms of building parents' and caregivers' sense of competency and control in a purposeful, positive way. That means partnering with families to build their capacity. This can be done by avoiding situations that make parents feel judged, talked down to or overwhelmed. Instead, focus on opportunities to help them feel like they are in control of their infant's health. Take time to celebrate the ways families are already creating comfortable and safe sleep environments for their infants as you also share information about reducing the risks of sleep-related infant death. Engage parents and caregivers as partners in the conversation. Ask if there are ways they think they could enhance their infant's safety based on the information you share.

When the parent or caregiver resists making the recommended change, try to reduce risks as much as possible. The following information, as well as the information covered in Parts 1 and 2, will prepare you to engage families in conversations about safe sleep.

Reducing risk

“If I talk with families about doing anything except what is recommended, then I am condoning unsafe or unhealthy behaviors. They need a firm message about what to do and what not to do or else they may not follow the recommendations.”

This concern is common and understandable. Since families will decide what they want to do, it is most productive to focus on giving information about how they can carry out their decisions. If they decide not to use all the recommendations, provide information about what factors create risk so they can address those factors. Help them reduce as much risk as possible. This approach is now included in the new American Academy of Pediatrics (AAP) safe sleep guidelines, which urges open and honest conversations with families.

Not talking about accommodating families’ decisions may put infants at risk.¹⁴

If you suspect power dynamics are creating resistance to changing sleep practices, and if it is safe and within your role to do so, engage both the abusive partner and survivor in the conversation and focus on the safety risks to the infant. Focusing on the effects on children has been shown to be a successful way to engage abusive partners in behavior change. Whenever possible, the best and safest practice is to connect with the survivor first to better understand the abusive partner’s pattern of coercive control and any personal safety risks that engaging in these conversations may create for the survivor, the infant and the family.

How the conversation starts

Consider starting the safe sleep conversation with an open-ended question such as one of the following. Several may sound familiar; you were asked some of these questions at the beginning of the training. You may wish to refer to your responses and the related guidance.

- “What do you know about how you were put to sleep as an infant?”
- “What do you already know about safe sleep practices?”
- “What does sleeping comfortably look like for you as an adult?”
- “Would you show me where you put your infant to sleep?” or “Can you describe your infant’s sleep environment?”
- “What are all the ways you help make sure your infant has a good sleep?”
- “Tell me how you and your spouse or partner made the decisions about the sleep practices you use?”

Approach to resistance

How do you approach resistance from a parent or caregiver?

- Use a strength-based approach and build on their protective factors (Protective factors are conditions or attributes of individuals, families, communities, or the larger society that reduce risk and promote healthy development and well-being of children and families).
- Praise families for what they are already doing to set up a healthy and supportive sleep environment.
- Explain the risks associated with sleep-related infant death, but don't use shame or fear.
- Explain the worst-case scenario with empathy and in a constructive, personal and caring manner.
- Explain risk reduction measures and encourage their use.
- Encourage follow-up with their medical provider about safe sleep.
- Collaborate with other community professionals and Tribes to share the message in a way that honors family and cultural traditions and values.

It is important to **listen** and understand why families may not utilize the AAP recommendations.

Reasons for resistance may include:

- Comfort of the infant or themselves
- Exhaustion
- Prior experience with other children or their own childhood
- Advice from family members or friends
- Lack of space for a crib
- Lack of a crib (money or access)
- Disbelief in the science because it changes all the time
- Receiving mixed messages from health care providers
- Receiving information that is outside of their cultural framework
- Belief that SIDS is “fate” or “God’s will”
- An incorrect perception of what a “good sleeper” is (Contrary to what many believe, a “good sleeper” is not an infant who sleeps 10 hours a night without waking up. A good sleeper is an infant who wakes up periodically and can go back to sleep on his or her own.)
- Feeling that the conversation about safe sleep implies that they are not a “good parent.”

Ask the parents and caregivers why they feel the way they do. Their words will guide how you respond and with what information. Approach the conversation with questions and **affirm you are hearing and understanding the family’s feelings and reasoning.**

To provide information in a constructive way to the parent or caregiver consider the following:

- Avoid using “should,” which may seem like a directive.
- Use interactive educational materials.
- The Jackson County Nurse-Family Partnership Program created safe sleep educational tools that use photos showing various infant sleeping arrangements to spark discussion with prenatal and new mothers about safer sleep practices. They asked parents and caregivers to explain what they see in the pictures and give feedback about the educational tool and how to improve it. This helped the home visitors understand what parents and caregivers learned and how to improve the tool itself. Making the clients the “experts” on how they felt about the tool elevated their participation and engagement as well as knowledge.
- Repeat, reinforce and layer additional information to encourage changing behavior.
- Parents or caregivers are not always ready to receive information or may not have the energy to learn a lot of new information at once. Provide aspects of safe sleep information that are relevant for them when they need it and build on that information over time.
- Combine safe sleep education with providing or referring to community resources for infant sleep sacks or sleep spaces. This increases knowledge and helps reduce economic barriers at the same time.
- Engage in conversations about values and beliefs with a non-judgmental attitude. This may increase trust and honesty about safe sleep practices.

Engagement, trust and ongoing efforts, often from multiple people, are necessary to effect change and reduce risk.

Scenarios

Below are six scenarios showing some statements and questions you may encounter when having conversations about infant safe sleep. Each statement or question is followed by an example response you may find helpful. Consider how you might adapt these potential responses to fit your voice and help in your work.

Scenario 1

When I was an infant, I was put on my stomach to sleep. Was that wrong?

No. Parents and caregivers were following advice based on the evidence they had at that time. Since then, research has shown that sleeping on the stomach increases the risk for SIDS. This research also shows that sleeping on the back carries the lowest risk of SIDS. That's why the recommendation is "back is best."

Scenario 2

"I put my infant to sleep on their stomach because they can roll over if needed."

When infants can easily turn over from back to stomach and from stomach to back, they should still be placed to sleep on their back. After they are asleep, if they roll over, you do not need to put them on their backs again. However, make sure there are no blankets, pillows, bumper pads or other items in the crib that the infant can roll against and suffocate.

Scenario 3

"My infant sleeps on their side because they are most comfortable that way."

If an infant is a stomach or side sleeper, the risk for SIDS is much higher. The side position is just as dangerous as placing the infant on the stomach because they can accidentally roll to the stomach. If an infant is used to sleeping on their stomach or side, changing to sleeping on their back **does not** increase the risk of SIDS. However, infants who are used to sleeping on their backs and are then placed to sleep on their stomachs are more likely to die from SIDS. That's why it's important to tell this to anyone caring for your infant, such as a grandparent who may not have the most current information.

Scenario 4

“When my infant is put to sleep on their back, they wake up scared, so I put them to sleep on their stomach.”

The startle response is a sudden movement that is sometimes seen as scary for the infant. Sometimes the infant gasps. This protects the infant, letting them get a breath of air or wake up slightly from too deep a sleep. Try using soothing techniques such as singing, patting or using a pacifier.

Scenario #5

“My parent said I had a bald spot from sleeping on my back and I don’t want that to happen to my infant.”

Infants who sleep on their backs can develop temporary bald spots on the back of the head. As the infant grows, moves and begins to sit up more often, the hair on the back of the infant’s head will grow back. A bald spot on the back of an infant’s head can be a sign of a healthy infant, one whose risk for sleep-related SUID or SIDS is lower because they are a back sleeper.

While the infant is awake, aware and supervised, tummy time is recommended and will help decrease the friction on the back of the head that leads to temporary bald spots.

Scenario #6

“I refuse to let my infant sleep on their back because I have heard that they will get a flat head.”

Back sleeping can contribute to flattening of the back of the head, but head flattening is usually temporary. As infants grow and become more active, their skulls will round out. You can reduce head flattening by doing the following:

- Providing tummy time during waking hours
- Switching which end of the crib you place the infant’s feet and, when changing infant’s diaper, alternating where the infant’s head is on the changing table
- Changing positions often when the infant is awake, and
- Limiting time spent in freestanding swings, bouncy chairs, car seats and other surfaces that, with a lot of use, can lead to head flattening or temporary bald spots.

Scenario #7

“My infant sleeps in our bed because my partner gets very upset if I get in and out of bed during the night. He has to get a good night sleep to be able to work the next day.”

I hear your concern. Are you open to considering other options, such as sleeping in another room or a different bed? If bedsharing is a practice you will continue, let's talk about other ways you can reduce risk for your infant. Are there safe ways to talk about infant sleep with you and your partner at the same time? Also, would you like to talk to someone about when your partner gets upset?

Activity: Practice communicating about safe sleep practices

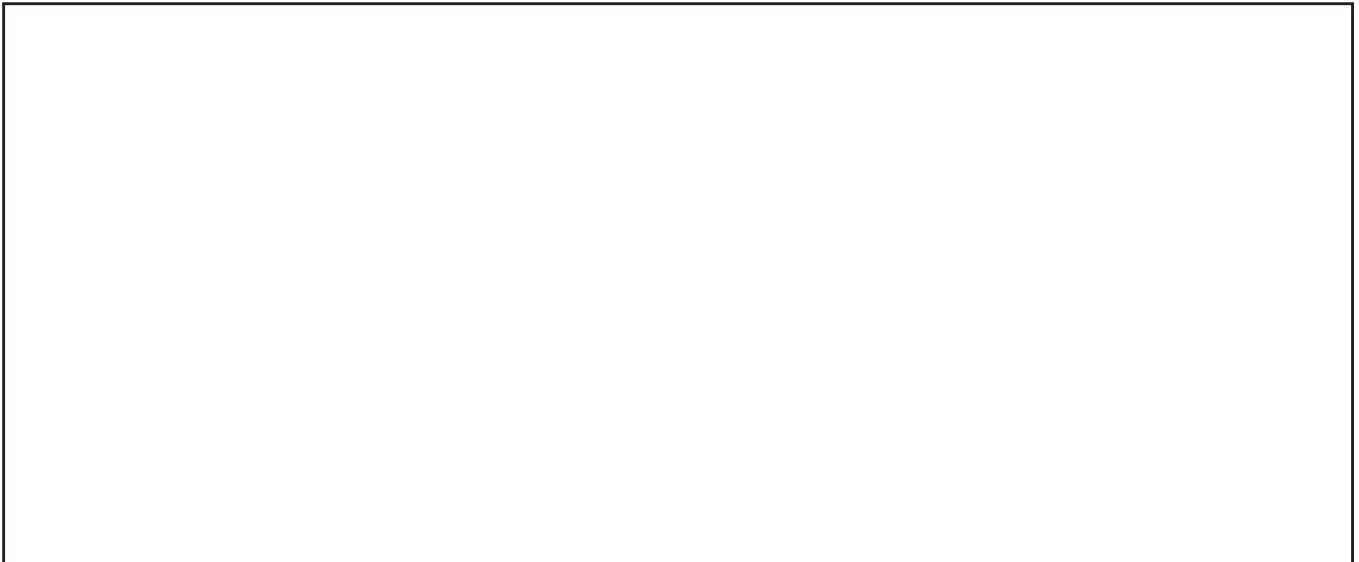
This is your opportunity to practice responding to a parent's statements or questions. In the space below each of the four statements, fill in how you would respond to the parent or caregiver. Remember, as with all communication with families, building and keeping trust is key!

- 1. I know putting my infant to sleep in a crib is safest, but they cry when they are laid down.**

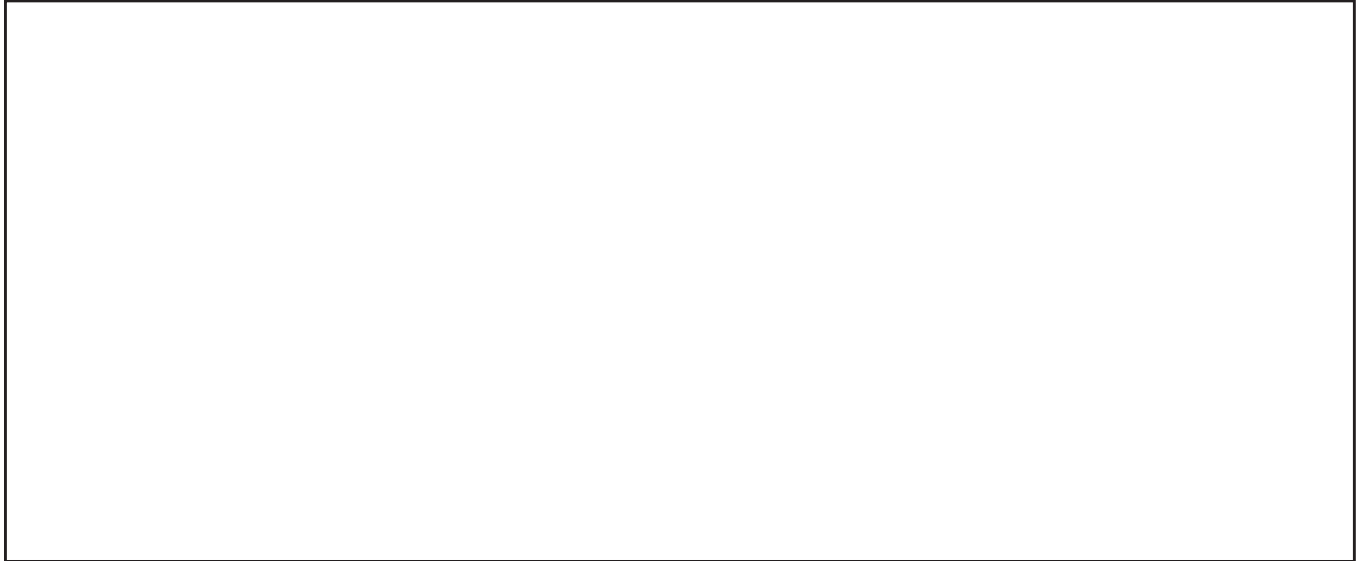
2. I put this blanket on my infant when they go to sleep so they won't get cold.



3. I smoke marijuana in the evening, outside of the home and after the children are asleep to help my anxiety, but I do not smoke around my infant and even shower and change my clothes after coming back into the house.



4. I don't drink around the children. Instead, I go out on weekends to drink while a babysitter watches the children (however, the parent comes home intoxicated and relieves the babysitter of duties).



When an infant's medical needs change sleep recommendations

Some infants may have special prescribed medical equipment, such as a G-tube. In these situations, a medical professional may alter sleeping arrangements. What might you do in these situations?

- If the parent needs clarification about the prescribed sleeping arrangement, consider offering to have a joint conversation with the medical provider and the parent. This may help the parent better understand the infant's current medical needs.
- Make sure the parent understands the recommendations and how they may differ for another infant in the home without the same medical needs.

Part 4: Wrap up

You have almost made it — great work! This is the final part to the safe sleep self-study. In this section you will:

- Complete the professional action plan
- Complete the knowledge check
- Complete the survey, and
- Review the resources.

Professional action plan

Fill out your action plan here.

As a result of this self-study training, what are three things you will do to make sure you share the information with families who have infants?	

Knowledge check

Answer key provided

Question	Answer options	Write the letter(s) that match your answer
1. What is the age range for an infant?	A. Under 2 years B. 0-12 months C. 0-6 months D. 2-12 months	
2. Side sleeping is an acceptable and safe sleep position for an infant.	A. True B. False	

Question	Answer options	Write the letter(s) that match your answer
3. Sleep-related SUID only occurs in the infant's crib.	A. True B. False	
4. What is a good time in an infant's development to stop swaddling?	A. Two weeks B. One month C. 2 months D. 6 months	
5. What should you do if an infant falls asleep in a baby swing?	A. Be very quiet B. Move the infant to a flat, firm sleep space. C. Stop the swinging.	
6. It is unsafe for a parent or caregiver to bring an infant into their bed if they are under the influence of any substances that interfere with normal sleep patterns.	A. True B. False	
7. Community partners play an important role in engaging parents in safe sleep conversations.	A. True B. False	
8. Examples of outside stressors include the following:	A. Placed to sleep on stomach B. Cigarette smoke C. Too much clothing D. All of the above	
9. Placing an infant on their back is the most effective action caregivers can take to reduce SIDS.	A. True B. False	
10. It is recommended that infants sleep in the same room as their caregiver or parent but on a separate sleep surface.	A. True B. False	

1.B 2.B 3.B 4.C 5.B 6.A 7.A 8.D 9.A 10.A

Online survey

Please complete the online survey and opportunity to provide feedback on this self-study by clicking on this link or pasting the link into your web browser: <https://forms.office.com/g/KV94eBzAis>

You can also access the survey with the camera on your mobile device using the QR code. Point your camera at the QR code so it appears on your screen. Click the banner and it takes you directly to the survey!



Questions and support

Family serving professionals in Oregon may email questions and requests for support related to this safe sleep self-study to CW.Prevention@dhsosha.state.or.us

Resources



The Safe to Sleep[®] campaign offers a variety of materials to help share safe infant sleep messages with diverse family audiences (African American, American Indian/Alaska Native and Spanish-speaking) <https://www1.nichd.nih.gov/sts/materials/Pages/default.aspx>

Videos for parents or guardians

<https://www1.nichd.nih.gov/sts/news/videos/Pages/default.aspx>

Oregon Public Health safe sleep webpage

<https://www.oregon.gov/oha/ph/HealthyPeopleFamilies/Babies/Pages/sids.aspx>

Safe Sleep for Babies brochure

<https://sharedsystems.dhsosha.state.or.us/DHSForms/Served/le8213.pdf>

Spanish Safe Sleep for Babies brochure (Sueño seguro para bebés)

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/ls8213.pdf>

NICHQ webinar: “Improving Infant Safe Sleep Conversations”

<https://www.nichq.org/improving-infant-safe-sleep-conversations>

Oregon Prenatal and Newborn Resource Guide (English and Spanish)

<http://www.oregon.gov/oha/PH/HEALTHYPEOPLEFAMILIES/WOMEN/PREGNANCY/PRENATALNEWBORNERESOURCEGUIDE/Pages/index.aspx>

Cribs for Kids

<https://www.cribsforkids.org>

AAP 2016 SIDS Task Force Recommendations

<https://pediatrics.aappublications.org/content/138/5/e20162938>

How to Keep Your Sleeping Baby Safe: AAP Policy Explained

<https://healthychildren.org/English/ages-stages/baby/sleep/Pages/A-Parents-Guide-to-Safe-Sleep.aspx>

Consumer Product Safety Commission (CPSC)

For information on crib safety, contact the CPSC at 1-800-638-2772 or <https://www.cpsc.gov/>

Promising Futures: Best Practices for Serving Children, Youth and Parent’s Experiencing Domestic Violence

<https://promising.futureswithoutviolence.org/>

Thank you for doing your part in keeping Oregon's infants safe

References

1. Common SIDS and SUID Terms And Definitions [Internet]. Safe to Sleep Campaign. National Institutes of Health; Available from: <https://safetosleep.nichd.nih.gov/safesleepbasics/SIDS/Common>
2. Filiano JJ, Kinney HC. A Perspective on Neuropathologic Findings in Victims of the Sudden Infant Death Syndrome: The Triple-Risk Model. *Biology of the Neonate*. 1994;65:194–7.
3. Known Risk Factors for SIDS and Other Sleep-Related Causes of Infant Death [Internet]. Safe to Sleep Campaign. National Institutes of Health; Available from: <https://safetosleep.nichd.nih.gov/safesleepbasics/risk/factors>
4. Image courtesy of the Safe to Sleep® campaign, for educational purposes only; Eunice Kennedy Shriver National Institute of Child Health and Human Development, <http://www.nichd.nih.gov/sids>; Safe to Sleep® is a registered trademark of the U.S. Department of Health and Human Services.
5. Swaddling: Is it safe? [Internet]. HealthyChildren.org. American Academy of Pediatrics; 2020 [cited 2021Aug20]. Available from: <https://healthychildren.org/English/ages-stages/baby/diapers-clothing/Pages/Swaddling-Is-it-Safe.aspx>
6. Image courtesy of the Safe to Sleep® campaign, for educational purposes only; Eunice Kennedy Shriver National Institute of Child Health and Human Development, <http://safetosleep.nichd.nih.gov>; Safe to Sleep® is a registered trademark of the U.S. Department of Health and Human Services.
7. Photo is courtesy of Ruby's Indian Crafts & Supplies located on the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).
8. Photo is courtesy of Wildbill family
9. Photo is courtesy of Geddes family
10. Feeding from a bottle [Internet]. Infant and Toddler Nutrition. Centers for Disease Control and Prevention; 2021 [cited 2021Aug20]. Available from: <https://www.cdc.gov/nutrition/InfantandToddlerNutrition/bottle-feeding/index.html>
11. Bottle feeding safety Tips fact sheet [Internet]. Children's Health Queensland Hospital and Health Services. Government of Queensland, Australia; 2017 [cited 2021Aug20]. Available from: <https://www.childrens.health.qld.gov.au/fact-sheet-bottle-feeding-safety-tips/>
12. Lobitz M. Six steps to safe swaddling [Internet]. Healthy Set Go. Allina Health; 2017 [cited 2021Aug20]. Available from: <https://www.allinahealth.org/healthyssetgo/care/six-steps-to-safe-swaddling>
13. Health effects of secondhand smoke [Internet]. Smoking & Tobacco Use. Centers for Disease Control and Prevention; 2020 [cited 2021Aug20]. Available from: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm

14. Parents' bed [Internet]. BASIS: Baby Sleep Info Source. Durham Infancy & Sleep Centre; [cited 2021Aug20]. Available from: <https://www.basisonline.org.uk/parents-bed/>
15. Module 1.4 talk back [Internet]. An Individualized Approach to Helping Families Embrace Safe Sleep & Breastfeeding. Georgetown University, National Center for Education in Maternal and Child Health; [cited 2021Aug20]. Available from: <https://www.ncemch.org/learning/building/approach/1-4-talk-back.php>
16. Building agency And Self-Efficacy: A VITAL opportunity to REDUCE Sleep-Related infant deaths [Internet]. Insights. National Institute for Children's Health Quality; [cited 2021Aug20]. Available from: <https://www.nichq.org/insight/building-agency-and-self-efficacy-vital-opportunity-reduce-sleep-related-infant-deaths>
17. Moon RY. SIDS and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment. Pediatrics. 2016Nov1;138(5).