



# Queensland Clinical Guidelines

*Translating evidence into best clinical practice*

Clinical Guideline

## Safer infant sleep

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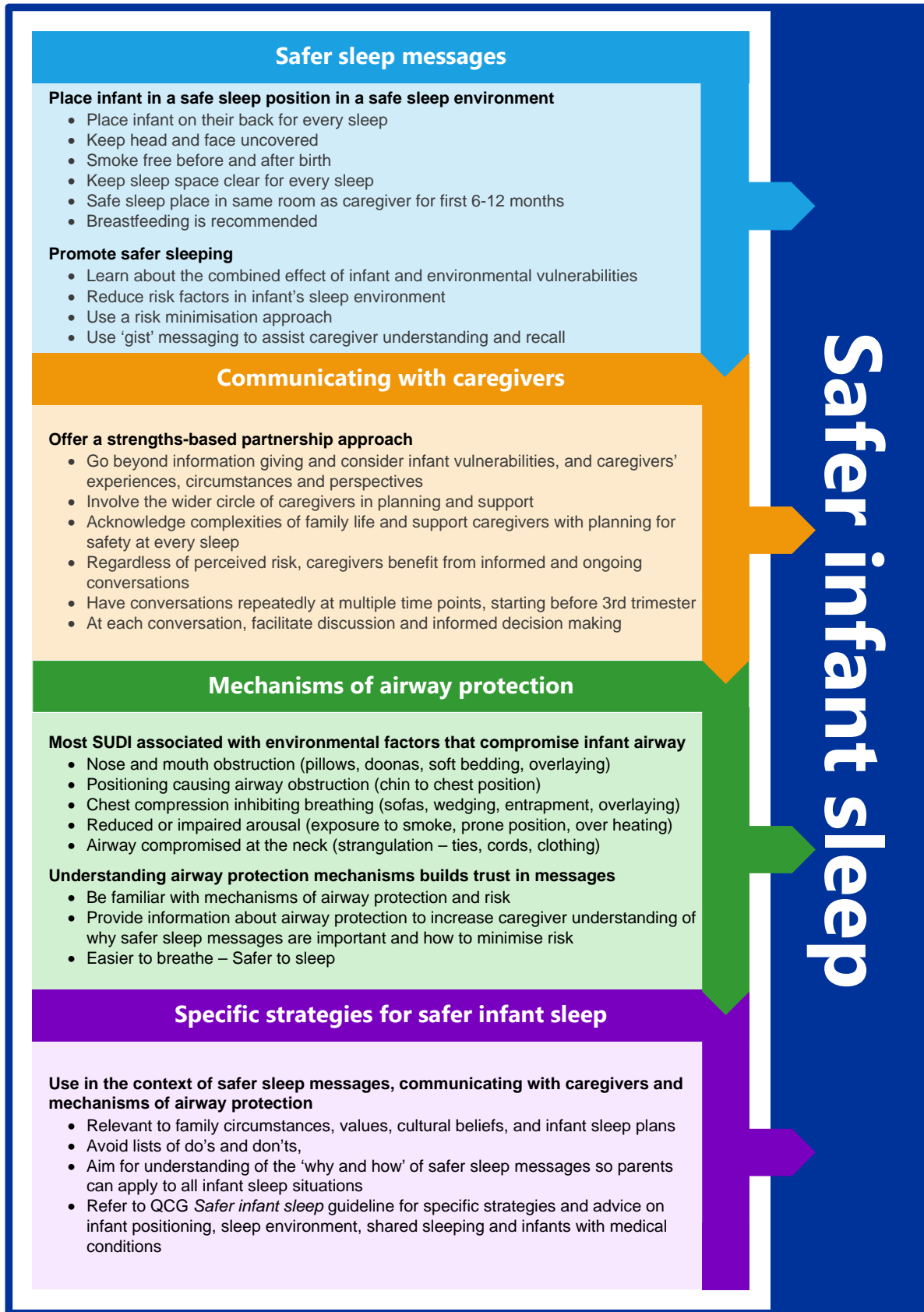
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**Flowchart: Summary safer infant sleep**



Flowchart: F22.71-1-V1-R27

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**Abbreviations**

GOR	Gastro-oesophageal reflux
GORD	Gastro-oesophageal reflux disease (GORD)
SUDI	Sudden unexpected death in infancy (SUDI)
URTI	Upper respiratory tract infection

**Definition of terms**

<b>Bronchiolitis</b>	Lower respiratory tract illness in infants caused by a viral illness that is usually self-limiting within 7-10 days. <sup>1</sup>
<b>Caregiver</b>	Any person providing care for an infant. May include (but not limited to) mother, father, partner, other extended family member, kinship carer, foster carer, family friend, clinician, childcare worker. This definition differentiates from siblings sleeping in the same room unless siblings are developmentally able to care for infant (e.g. more than 14 years and aware of safe sleep principles).
<b>Dummy</b>	May also be known as a <i>pacifier</i> or <i>soother</i> Rubber, plastic, or silicone nipple substitute given to an infant to suckle upon between feeds to soothe or aid settling.
<b>Inclined sleep position</b>	Any situation where the infant is placed in an inclined, elevated or propped position for sleep rather than on a firm, flat, level (horizontal) surface.
<b>Infant</b>	Baby aged 0–12 months.
<b>Gastro-oesophageal reflux (GOR)</b>	The passage of gastric contents into the oesophagus, with or without regurgitation and vomiting or 'possets'. It is a physiological process that may occur several times a day in healthy infants. The amount of food regurgitated, or vomited, will vary from infant to infant. <sup>2,3</sup>
<b>Gastro-oesophageal reflux disease (GORD)</b>	Occurs when the reflux of gastric contents causes an adverse effect on the well-being of the infant (e.g. refusal to feed, irritability with feeding, poor growth) and medical assessment is required. <sup>3</sup>
<b>Risk elimination</b>	An approach that proposes parents are informed not to bed-share or co-sleep with their infant under any circumstances. Not supported by current evidence and is often not practical or adhered to by parents. <sup>4-6</sup>
<b>Risk minimisation</b>	An approach that advocates an individual family's circumstances are considered when providing advice about the infant care practices parents use in caring for their infant. Supports the recommendation that parents are provided with information that includes benefits and strategies to reduce the risk and increase safety associated with all infant sleep environments, including shared sleeping
<b>Room sharing</b>	Sleeping the infant in a cot or other separate sleeping surface in the same room as the parents.
<b>Sleep space</b>	The environment around the sleeping infant; inclusive of bedding, type of infant bed or other sleep surface, items in the sleep space such as pillows or toys, infant clothing and wearable items, what infant is wearing, whether the infant is sleeping alone or in a shared sleep setting.
<b>Sleep position</b>	Position of the infant when they are placed to sleep. For example, supine (lying on back), prone (lying on stomach), side-lying, or with sleep surface inclined.
<b>Shared sleeping</b>	Any time an infant shares a surface with another person, whether shared sleep is intended or not (incorporates bed-sharing and co-sleeping).
<b>Sudden infant death syndrome (SIDS)</b>	Sudden unexpected death of a baby under 1 year of age, apparently occurring during sleep, that remains unexplained after a thorough investigation including the performance of a complete autopsy and review of circumstances of death and the clinical history. <sup>7</sup>
<b>Sudden unexpected death in infancy (SUDI)</b>	A classification used to describe the sudden death of an infant, usually during sleep, with no immediately obvious cause at time of death. After investigation deaths may be explained (e.g. infection, fatal sleeping accidents) or remain unexplained (e.g. SIDS). <sup>8</sup>
<b>Upper respiratory tract infection (URTI)</b>	A non-specific term used to describe acute infections involving the nose, sinuses, pharynx and larynx; includes the common cold.

# 1 Introduction

Safer sleep recommendations are based on infant care practices that are associated with a reduced risk of Sudden Unexpected Death in Infancy (SUDI). SUDI includes, but is not limited to, Sudden Infant Death Syndrome (SIDS) and fatal sleeping accidents.

Safer sleep recommendations focus on understanding the combined effect of infant vulnerabilities and removing as many factors as possible from the infant's environment that may place them at increased risk within their family circumstances. This risk minimisation approach supports offering caregivers information that includes benefits and risks of various infant sleep environments and includes strategies to reduce risk and increase safety associated with infant sleep environments including shared sleeping.

Caring for infants in the context of unique family circumstances is complex. Evidence suggests that interventions which go beyond simple information provision are most effective when co-designed with caregivers, taking into consideration the experiences, circumstances and social and cultural perspectives of families.<sup>6,9</sup>

The recommendations in this guideline are relevant to infant caregivers, defined as any person providing care to an infant [refer to Definition of terms]. These recommendations are intended to underpin local policies and procedures relevant to the care of infants in acute, hospital and community health care settings.

## 1.1 Safer sleep messages

Safer sleep messages are brief statements about SUDI risk-reduction practices. Introduce and reinforce safer infant sleep messages at each contact from the first antenatal contact to the end of infancy to increase their knowledge and ability to make safer choices about infant sleep. Include both list and gist messaging<sup>10</sup> [refer to Table 2. Gist and list messaging].

Table 1. Safer sleep messages

Aspect	Consideration
<b>SUDI risk reduction practices<sup>11</sup></b>	<ul style="list-style-type: none"> <li>• Place infant in a safe sleep position within a safe sleep environment               <ul style="list-style-type: none"> <li>○ Place infant on their back for every sleep</li> <li>○ Keep head and face uncovered</li> <li>○ Smoke free before and after birth</li> <li>○ Keep sleep space clear for every sleep</li> <li>○ Safe sleep place in same room as caregiver (for the first 6–12 months)</li> <li>○ Breastfeeding is recommended</li> </ul> </li> </ul>
<b>Clear sleep space and airway<sup>11,12</sup></b>	<ul style="list-style-type: none"> <li>• Place infant in a clear sleep space, free of items that may compromise infant breathing or increase risk of suffocation (e.g. covered face, pinched nose, chin to chest positioning, pressure against chest)</li> <li>• Can be provided in a cot or bassinet</li> <li>• Caregivers can provide a clear space for the infant in their bed, whether they choose to share a sleep surface or fall asleep unintentionally               <ul style="list-style-type: none"> <li>○ Recommend risk reduction strategies for shared sleeping situations</li> </ul> </li> </ul>

### 1.1.1 Gist and list messaging

Table 2. Gist and list messaging

Message type	Consideration
<b>List (or verbatim)<sup>10</sup></b>	<ul style="list-style-type: none"> <li>• Identifies detailed ways to achieve the message intent.</li> <li>• In the safe sleep context, the intent is easy breathing during sleep and prevention of suffocation (e.g. recommendations for actions to be taken or avoided)</li> <li>• Reliance on list messaging alone is less likely to influence caregiver practices and may increase risk-taking at sleep time</li> </ul>
<b>Gist (general sense of)<sup>10</sup></b>	<ul style="list-style-type: none"> <li>• Is a memorable summary of the message intent</li> <li>• Builds on caregiver's general sense of the list message and adds meaning</li> <li>• Easier for caregivers to recall</li> <li>• More likely to be followed</li> </ul>
<b>Suggested gist message</b>	<ul style="list-style-type: none"> <li>• Easy to breathe—safer to sleep</li> </ul>

## 1.2 Triple Risk Model and SUDI

The Triple Risk Model suggests there are critical periods of development during which vulnerable infants are unable to cope with external stressors and which may lead to sudden and unexpected death.<sup>13,14</sup> It was initially developed to understand the multifactorial nature of SIDS, however general vulnerability, age-specific risks and environmental trigger events are factors common to the broader category of SUDI.<sup>15</sup>

Application of the Triple Risk Model to SUDI emphasises the interrelationships in predisposing factors, however one domain may contribute the greatest risk, depending on infant vulnerability and stage of development.

Health professional knowledge and application of safer sleep guidelines focus on removing as many of the risk factors as possible from the infant’s environment during that critical first year of life.

Table 3. Triple Risk Model

Domain	Consideration
<b>Vulnerabilities</b>	<ul style="list-style-type: none"> <li>• Intrinsic infant vulnerability includes                             <ul style="list-style-type: none"> <li>○ Prematurity or low birth weight</li> <li>○ Exposure to smoke (tobacco or e-cigarettes) before and/or after birth</li> <li>○ Exposure to substances causing drowsiness, or to alcohol before and/or after birth</li> <li>○ Underlying health problems or genetic vulnerabilities</li> </ul> </li> </ul>
<b>Critical periods</b>	<ul style="list-style-type: none"> <li>• Between 0–12 months                             <ul style="list-style-type: none"> <li>○ Greater risk between 0–6 months</li> <li>○ Greatest risk between 2–4 months</li> </ul> </li> </ul>
<b>External (exogenous) stressors</b>	<ul style="list-style-type: none"> <li>• An unsafe sleep environment (e.g. prone sleep position, soft sleep surface, head covering, over heating or hazardous sleep environment such as a sofa)</li> <li>• Respiratory infection</li> </ul>
<b>Other considerations</b>	<ul style="list-style-type: none"> <li>• When providing support to infant and family, consider:                             <ul style="list-style-type: none"> <li>○ More than one factor (cumulative effect)</li> <li>○ Factor interaction (e.g. maternal smoking (tobacco or e-cigarettes) and unsafe sleep environments)</li> <li>○ Model domains may contribute unequally to an individual infant’s risk (e.g. a two-month infant, born prematurely or exposed to tobacco or e-cigarette smoke in-utero, wrapped and placed prone on a soft pillow is unlikely to maintain a clear airway. Equally a healthy term infant placed in the same position is also at risk)<sup>15</sup></li> <li>○ As they grow, factors may change (e.g. how they move and interact with the sleep environment [refer to Table 22. Infant development])</li> </ul> </li> </ul>

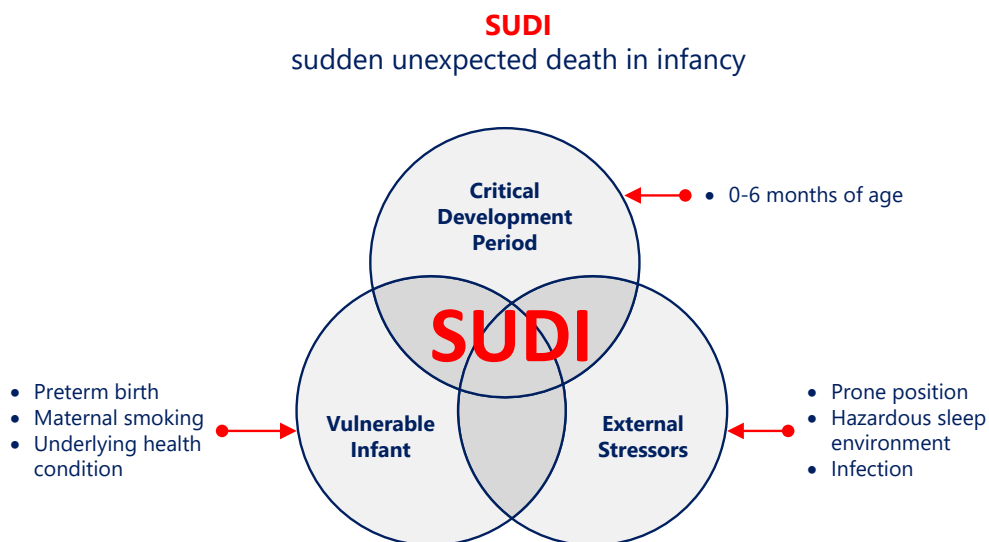


Figure 1. SUDI and Triple Risk Model

Adapted from Filiano JJ, Kinney HC et al. A perspective on neuropathologic findings in victims of the sudden infant death syndrome: the triple-risk model (1994)<sup>6</sup>

### 1.3 Communicating with caregivers

Table 4. Communicating with caregivers

Aspect	Consideration
<b>Key concepts<sup>9</sup></b>	<ul style="list-style-type: none"> <li>• Offer a strengths-based partnership approach to safe sleep support</li> <li>• Go beyond information giving and consider infant vulnerabilities, and caregivers' experiences, circumstances and perspectives</li> <li>• Consider and include the wider circle of caregivers in the infant's life in safe sleep planning and support</li> <li>• Acknowledge the complexity of infant care and support caregivers with planning for safety at every sleep</li> <li>• Increase understanding and trust in safe sleep messages by explaining the mechanisms of airway protection               <ul style="list-style-type: none"> <li>○ Refer to Table 5. Sleeping positions</li> </ul> </li> </ul>
<b>General principles</b>	<ul style="list-style-type: none"> <li>• Caregivers, regardless of perceived risk, will benefit from informed and ongoing conversations about an infant's breathing needs and safer sleep</li> <li>• Have these conversations repeatedly at multiple time points including:               <ul style="list-style-type: none"> <li>○ Antenatal, ideally commence by 28 weeks (early 3<sup>rd</sup> trimester)</li> <li>○ Perinatal (prior to hospital discharge/post birth education)</li> <li>○ Postnatal at every opportunity (e.g. child health visits, breastfeeding support contacts, 6–8 week postnatal check, immunisation visits)</li> </ul> </li> <li>• At each conversation, facilitate discussion about infant sleep to support informed decision making about safer infant sleep practices</li> <li>• Provide clear and impartial information about the need for a safe clear space for infant sleep</li> <li>• Offer the opportunity to ask questions</li> <li>• Set goals for actions to be followed up</li> </ul>
<b>Home visiting</b>	<ul style="list-style-type: none"> <li>• Provides an opportunity to:               <ul style="list-style-type: none"> <li>○ View the infant's sleep space</li> <li>○ Initiate tailored conversations and discussions</li> </ul> </li> </ul>
<b>Discussion points with caregivers</b>	<ul style="list-style-type: none"> <li>• Ask caregivers about:               <ul style="list-style-type: none"> <li>○ Plans for infant sleeping</li> <li>○ Knowledge/understanding of infant sleeping (what/where/how and benefits and risks of different environments)</li> <li>○ Experiences with infant sleeping</li> </ul> </li> <li>• Discuss strategies for:               <ul style="list-style-type: none"> <li>○ Creating a safer infant sleep space</li> <li>○ Shared sleeping, anticipating that it may occur, whether intended or not</li> <li>○ When caregivers are less responsive to infant needs (excessively tired, unwell, medication/alcohol/ substance consumption, lifestyle factors)</li> <li>○ Utilise multiple messaging methods to meet the learning needs of a diverse community (e.g. written, illustration, verbal, video, demonstration)</li> </ul> </li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Assess level of risk/need associated with infant sleeping</li> <li>• Ideally observe the sleep space at a home visit</li> <li>• Refer to Table 3. Triple Risk Model, including:               <ul style="list-style-type: none"> <li>○ Intrinsic factors</li> <li>○ Stage of infant development</li> <li>○ External stressors</li> </ul> </li> <li>• Identify infants and caregivers:               <ul style="list-style-type: none"> <li>○ For whom shared sleeping is not recommended</li> <li>○ Where inclined sleeping or non-supine sleep positions have been medically recommended</li> <li>○ Refer to Figure 4. Risk minimisation response model</li> </ul> </li> </ul>
<b>Managing risk</b>	<ul style="list-style-type: none"> <li>• Provide clear and impartial information about safer infant sleep practices to promote ease of infant breathing</li> <li>• If risks are identified, but a safe sleep space is not available, discuss and provide (or refer) for alternative safe sleep environments for caregivers [refer to Figure 4. Risk minimisation response model]</li> <li>• Use clinical judgement and reasoning to determine if safe sleep needs are best managed with caregivers, additional health professional support and/or more targeted services</li> </ul>



## 2 Supine is the safest sleep position

Table 5. Sleeping positions

Aspect	Consideration
<b>Supine sleep position reduces risk of SUDI<sup>16</sup></b>	<ul style="list-style-type: none"> <li>Increases protection from SUDI<sup>16,17</sup></li> <li>Decreases the risk of:                             <ul style="list-style-type: none"> <li>Airway obstruction, as the face remains clear of surfaces and potential obstruction</li> <li>Rebreathing carbon dioxide, as the mouth and nose are clear of surfaces                                     <ul style="list-style-type: none"> <li>Rebreathing carbon dioxide may affect infant arousal responses</li> </ul> </li> <li>Choking on vomit or posset, as the trachea is positioned above the oesophagus in a supine position</li> </ul> </li> <li>Infant protective airway mechanisms of arousal and swallowing work most efficiently and effectively in the supine position</li> <li>Prone sleep position increases risk of SUDI                             <ul style="list-style-type: none"> <li>Supported by considerable evidence from epidemiological studies<sup>17</sup></li> </ul> </li> <li>Rapid decline in SUDI since the introduction of the “Back to Sleep” campaign further confirms the role of supine sleeping in reducing infant deaths<sup>17,18</sup></li> <li>Refer to Figure 2. Mechanics of supine and prone positioning</li> </ul>
<b>Non-supine sleep positions increase risk of SUDI<sup>16</sup></b>	<ul style="list-style-type: none"> <li>Non-supine sleep positions (prone, side lying) increase the risk of SUDI<sup>16</sup> up to fourteen times more than supine sleeping<sup>19</sup></li> <li>Prone and side-lying positions reduce infant arousal and affect swallowing, which are protective airway mechanisms</li> <li>In a prone sleeping position, infant may be unable to physically move their mouth and nose away from surfaces that increase the risk of asphyxiation, (e.g. soft bedding, pillows, soft surfaces, sleep positioners)</li> <li>Infants placed on their side to sleep are unstable with a high risk of rolling prone and not being able to move from this position</li> <li>In a prone sleep position, the oesophagus is anatomically higher than the airway and in very close proximity to the laryngeal opening                             <ul style="list-style-type: none"> <li>This increases the risk of aspiration of any regurgitated milk or fluid that may pool at the opening of the trachea, making inhalation into the lungs more likely</li> </ul> </li> <li>Avoid chin to chest positioning, which may cause airway obstruction (e.g. infant slings/baby carriers or car seats)</li> <li>Refer to:                             <ul style="list-style-type: none"> <li>Figure 2. Mechanics of supine and prone positioning</li> <li>Figure 3. Chin to chest may compromise airway</li> </ul> </li> </ul>

### 2.1 Mechanics of supine and prone positioning

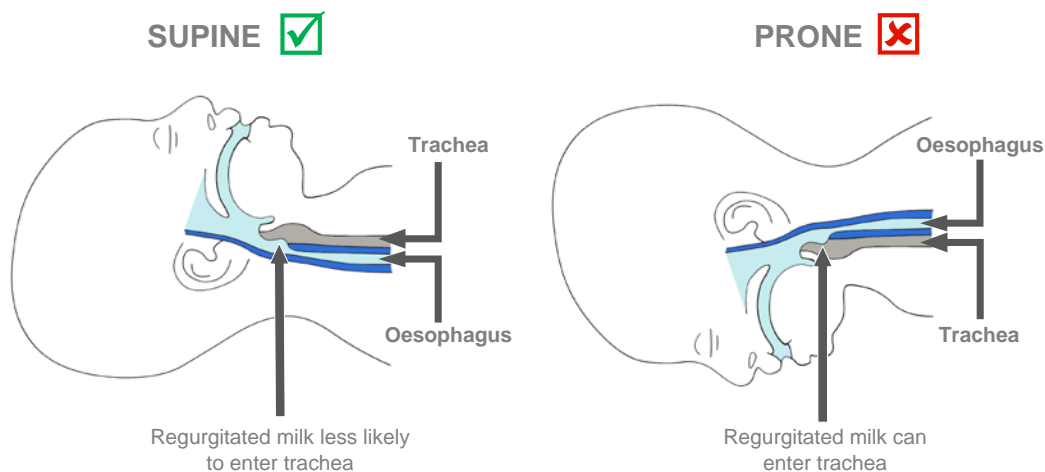


Figure 2. Mechanics of supine and prone positioning

Adapted with permission from Professor Jeanine Young

## 2.2 Common caregiver concerns with supine sleep position

Table 6. Common caregiver concerns with supine sleeping

Aspect	Consideration
<b>Choking or aspirating</b> <sup>6,16</sup>	<ul style="list-style-type: none"> <li>The risk of choking or aspirating is less when infants sleep in a supine position               <ul style="list-style-type: none"> <li>Healthy infants protect their airway by swallowing</li> <li>In the supine position, swallowing and arousal reflexes allow the infant to clear and protect their own airway</li> <li>When an infant is on their back, the upper respiratory airways are positioned above the oesophagus and regurgitated milk is easily swallowed; aspiration of fluid into the airways is less likely to occur</li> </ul> </li> <li>Refer to               <ul style="list-style-type: none"> <li>Table 5. Sleeping positions</li> <li>Figure 2. Mechanics of supine and prone positioning</li> </ul> </li> </ul>
<b>Positional plagiocephaly</b> <sup>6,16</sup>	<ul style="list-style-type: none"> <li>Positional plagiocephaly describes a flattened spot on an infant's head</li> <li>Occurs in a small number of infants and may be associated with lying with head in one position for extended periods</li> <li>To reduce the risk of positional plagiocephaly, position the infant supine for sleep and               <ul style="list-style-type: none"> <li>Alternate head position (left or right) for each sleep</li> <li>If head consistently turns towards caregiver, vary head to toe position (when not sharing a sleep surface)</li> <li>Offer increasing amounts of awake supervised tummy time</li> <li>Alternate the holding position when feeding and holding (i.e. left arm then right arm)</li> <li>Supine to sleep, prone to play, sit up to watch the world</li> </ul> </li> <li>'Infant positioners' marketed to reduce plagiocephaly not recommended due to risk of airway obstruction</li> </ul>
<b>Infant Settling</b> <sup>6</sup>	<ul style="list-style-type: none"> <li>Some caregivers are concerned that infants arouse more when supine</li> <li>In the supine position, protective arousal reflexes work more effectively to allow infant to clear and protect their own airway</li> </ul>
<b>Recommendation</b>	<ul style="list-style-type: none"> <li>Provide clear, impartial information about risks of placing infant in a non-supine sleep position</li> <li>Discuss alternative strategies for settling babies to reduce use of non-supine sleep positions</li> <li>Explain that even if infant has reflux, possets or vomits after feeding or has a head cold, inclined sleep position is not recommended</li> </ul>

## 2.3 Risks of inclined sleep position

Supine on a firm, flat, level surface is the safest way for an infant to sleep.

Table 7. Inclined sleep position

Aspect	Consideration
<b>Context</b>	<ul style="list-style-type: none"> <li>An inclined surface (e.g. cots raised at one end, car seats, bouncers, rockers, and particularly makeshift inclines using pillows or arm support by a caregiver) increase instability in infant positioning</li> <li>The infant head is large and heavy relative to body size</li> </ul>
<b>Mechanisms of increased risk of SUDI</b>	<ul style="list-style-type: none"> <li>Inclined sleep position increases risk of infant               <ul style="list-style-type: none"> <li>Rolling forward, to the side, or prone, thereby increasing risk of airway obstruction if face turns into soft bedding or surface</li> <li>Head dropping forwards in a 'chin to chest' posture, compressing airway and causing suffocation from obstruction<sup>20</sup></li> <li>With activation of abdominal muscles and/or head droop, rolling prematurely to the side or prone, even if they have not done this before<sup>21</sup></li> <li>Slipping down into a slumped posture involving chin to chest and/or a curved back (C-shape), making chest and diaphragm movement difficult (e.g. sling or baby carrier use)</li> </ul> </li> <li>Refer to Figure 3. Chin to chest may compromise airway</li> </ul>

## 2.4 Short term inclined position use

Table 8. Short term use of inclined position

Aspect	Consideration
<b>Settling prior to transfer to safe sleep position</b>	<ul style="list-style-type: none"> <li>Caregivers may choose to settle infant to sleep by holding the infant in their arms or on their chest while sitting up in a bed or chair</li> <li>Only safe when a cognitively unimpaired caregiver is awake and the infant's face can be observed, close contact is promoted, and a clear airway can be maintained</li> <li>If the caregiver falls asleep with the infant in this position, the risk of SUDI from entrapment and/or suffocation against the carers body or against soft bedding is significantly increased</li> </ul>
<b>Inclined infant products</b>	<ul style="list-style-type: none"> <li>Infants may fall asleep in infant products which have an incline (e.g. car capsule/seat, pram, or bouncer)</li> <li>Use of slings and baby carriers to support babywearing practices also require awareness of infant airway needs</li> </ul>
<b>Recommendation</b>	<ul style="list-style-type: none"> <li>Once settled, recommend caregivers place their infant in a safe clear sleep space, that is firm, flat and level, to avoid airway obstruction</li> <li>Provide caregivers with suggestions for infant settling and transfer to a safe sleep space appropriate to the infant's needs</li> <li>Refer to               <ul style="list-style-type: none"> <li>Section 2 Supine is the safest sleep position</li> <li>Section 3 Safe clear space for infant sleep</li> </ul> </li> </ul>

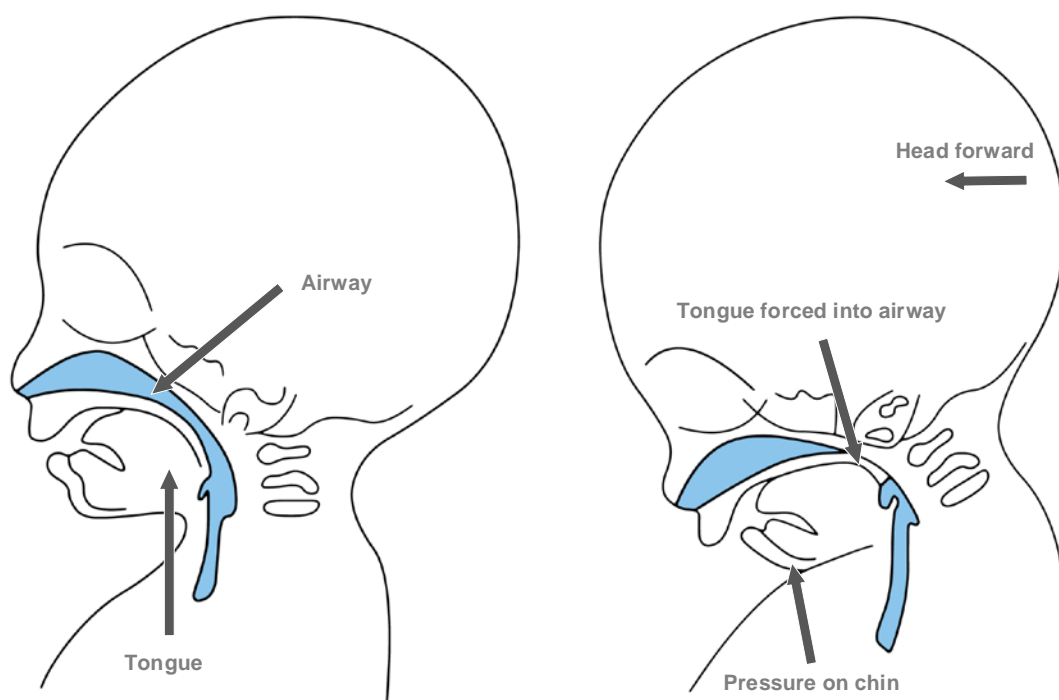


Figure 3. Chin to chest may compromise airway

Adapted from Tonkin et al. Safe Sleep for Babies (2013)<sup>20</sup>

### 3 Safe clear space for infant sleep

#### 3.1 Mechanism of SUDI in the infant sleep space

Table 9. Mechanism of SUDI in infant sleep space

Aspect	Consideration
<b>Reduced or impaired arousal</b> <sup>17</sup>	<ul style="list-style-type: none"> <li>• Tobacco smoke and e-cigarettes<sup>22</sup> <ul style="list-style-type: none"> <li>○ In-utero and passive exposure after birth affects brainstem development and responses</li> <li>○ In-utero exposure is associated with decreased arousal to hypoxic stimuli (a threat to breathing) in the sleep environment</li> </ul> </li> <li>• Rebreathing of carbon dioxide           <ul style="list-style-type: none"> <li>○ When air circulation around the face is inhibited by additional items placed within the sleep space</li> </ul> </li> </ul>
<b>Physical obstruction of airways and breathing</b> <sup>17</sup>	<ul style="list-style-type: none"> <li>• Nose and/or mouth obstruction (e.g. pillows, nests, doonas, soft bedding)           <ul style="list-style-type: none"> <li>○ Refer to Table 10. Factors that increase risk of SUDI</li> </ul> </li> <li>• Positioning causing airway obstruction (e.g. chin to chest position, occlusion of airway by breast or body part)</li> <li>• Airway compromised at neck (strangulation) (e.g. ties, clothing, curtain cords, necklaces)</li> <li>• Breathing compromised by chest or abdominal compression (e.g. wedging in gaps in sofas, mattresses and walls, overlaying, collapsed travel cot)</li> </ul>
<b>Overheating</b> <sup>17</sup>	<ul style="list-style-type: none"> <li>• Most obstructive events occur during infant REM sleep<sup>23</sup>.</li> <li>• Overheating increases risk of REM sleep</li> <li>• Keeping infant's head and face uncovered helps infant to thermoregulate</li> <li>• Reduced circulation of air around sleep environment increases risk of overheating (e.g. cover/blanket over pram)</li> </ul>

### 3.2 Factors that increase the risk of SUDI

Table 10. Factors that increase risk of SUDI

Aspect	Consideration
<b>Soft surfaces or items in the sleep space</b> <sup>24-30</sup>	<ul style="list-style-type: none"> <li>• Any soft surfaces which may cause obstruction of the nose and/or mouth or rebreathing of carbon dioxide which may reduce arousal response               <ul style="list-style-type: none"> <li>○ Head covering and hats</li> <li>○ Soft and/or sagging mattresses or sleep surfaces</li> <li>○ Pillows</li> <li>○ Bed coverings – doonas, duvets, sheets, blankets</li> <li>○ Bumpers and other decorative items – even if marketed as ‘breathable’</li> <li>○ Toys and other items in the sleep space</li> <li>○ Lambswool or folded blanket to soften the sleep surface</li> <li>○ Layering of additional mattresses to the sleep space</li> <li>○ Positional products or soft-sided/based sleep devices (e.g. ‘nests’)</li> <li>○ Water beds, bean bags</li> <li>○ Sofas and couches</li> <li>○ Other children or pets in the infant sleep space</li> </ul> </li> <li>• Refer to Section 4 Shared sleeping</li> </ul>
<b>Positioning causing airway obstruction</b> <sup>24-30</sup>	<ul style="list-style-type: none"> <li>• Elevating/tilting sleep surface (e.g. cot mattress)</li> <li>• Propping on pillows (chin to chest, airway obstruction by soft surface)</li> <li>• Car capsules: greatest risk occurs when:               <ul style="list-style-type: none"> <li>○ Infant too small for capsule (head tilts forward into chin-to-chest position)</li> <li>○ Additional padding is placed around head</li> <li>○ Restraints not fastened as per manufacturers instructions</li> <li>○ Infant is left to sleep for long periods unsupervised</li> </ul> </li> <li>• Slings which place or allow infant to assume a C-shaped posture or cradled position (chin-to-chest)               <ul style="list-style-type: none"> <li>○ Inclined sleepers, bouncers or wedges which allow chin-to-chest or obstruction risk</li> <li>○ Not recommended for infant sleep</li> </ul> </li> <li>• Refer to               <ul style="list-style-type: none"> <li>○ Section 2.3 Risks of inclined sleep position</li> <li>○ Figure 3. Chin to chest may compromise airway</li> </ul> </li> </ul>
<b>Strangulation</b> <sup>24-30</sup>	<ul style="list-style-type: none"> <li>• Infant necklaces, including teething necklaces               <ul style="list-style-type: none"> <li>○ Increase risk of obstruction through twisting mechanism or if pieces detach and enter airway</li> </ul> </li> <li>• Window blind cords, necklaces</li> <li>• Bumpers and bumper cords</li> <li>• Ribbons/decorations on, or attached to, toys and/or dummy</li> <li>• Cords for electrical items (e.g. cords for infant monitors, mobile phones, portable fans, air conditioners)</li> </ul>
<b>Tobacco smoke</b> <sup>24-30</sup>	<ul style="list-style-type: none"> <li>• All tobacco smoke, especially during pregnancy, increases risk of SUDI</li> <li>• Evidence suggests e-cigarettes have similar effects on fetal and infant health outcomes as tobacco<sup>22</sup></li> </ul>

### 3.3 Minimising risk of SUDI in the infant sleep space

Table 11. Reduce risk in the sleep space

Aspect	Consideration
<b>Surface</b> <sup>11,24</sup>	<ul style="list-style-type: none"> <li>• Firm, flat, level sleep surface</li> <li>• Mattress fits snugly in the base of cot, travel cot or bassinet without gaps or excess</li> <li>• No additional items are placed on sleep surface               <ul style="list-style-type: none"> <li>○ No pillows</li> <li>○ No sleep positioners or baby nests, in particular no device in sleep space that restrains infant in place</li> <li>○ No lambswool or memory foam underlays</li> <li>○ No doonas or blankets on top of firm flat level surface to make it softer</li> <li>○ No additional padding/mattress/foam in travel cot</li> <li>○ No bumpers even if marketed as breathable</li> </ul> </li> </ul>
<b>Bedding</b> <sup>11,24</sup>	<ul style="list-style-type: none"> <li>• Surface coverings over mattress               <ul style="list-style-type: none"> <li>○ Only fitted mattress protector and/or fitted or firmly tucked in sheet</li> </ul> </li> <li>• No doonas, duvets or heavy thick blankets under or over infant</li> <li>• Use layered light blankets tucked in firmly at level of shoulders or lower               <ul style="list-style-type: none"> <li>○ Keep away from face</li> <li>○ Position infant feet to foot (bottom) of the cot/bassinet if sleeping in a cot/bassinet to reduce risk of head covering by bedding</li> </ul> </li> <li>• Consider warmer infant clothing or use an infant sleeping bag to avoid need for extra bedding</li> <li>• If wrapping infant in cotton or muslin cloth, infant's head and face remains uncovered</li> <li>• No weighted products (e.g. blankets, toys, heat packs, sleeping bags)</li> </ul>
<b>Sleep wear at sleep time</b> <sup>11,24</sup>	<ul style="list-style-type: none"> <li>• Dress in comfortable clothing that is not too loose</li> <li>• Dress appropriately for the weather, avoid overdressing               <ul style="list-style-type: none"> <li>○ Similar to caregiver requirements</li> </ul> </li> <li>• If used, ensure infant sleeping bag has fitted neck and arm holes, no hood and arms are free</li> <li>• Remove hats, beanies and clothing with hoods</li> <li>• If used, recommend the removal of jewellery or necklaces (spiritual, cultural, religious) and cords/ribbons from dummy</li> </ul>
<b>Surrounding environment</b> <sup>11,24</sup>	<ul style="list-style-type: none"> <li>• Keep free from tobacco smoke (avoid all smoking (tobacco or e-cigarettes inside the home)</li> <li>• Keep the sleep space clear of additional items               <ul style="list-style-type: none"> <li>○ No pillows, blankets, doonas, toys, bumpers or other decorative items</li> </ul> </li> <li>• Keep the sleep space free of blind/curtain cords, ribbons, electrical cords and other possible strangulation hazards</li> <li>• Avoid electric blankets, hot water bottles or wheat bags</li> <li>• Ideally the room is ventilated and comfortable temperature</li> <li>• Keep heaters well away</li> </ul>
<b>Infant wrapping</b> <sup>11,24</sup>	<ul style="list-style-type: none"> <li>• Successfully used by many caregivers to calm younger infants and to assist with sleep in a supine position</li> <li>• When startle reflex disappears, place a wrapped infant supine with arms and hands free</li> <li>• Use only lightweight breathable fabrics (e.g. muslin or cotton)</li> <li>• Wrap firmly but allow some hip movement and chest wall expansion</li> <li>• Do not wrap above the shoulders; no head covering</li> <li>• Ensure infant is not overdressed under the wrap to prevent overheating</li> <li>• Not recommended in shared sleep situations</li> <li>• Discontinue at first sign of:               <ul style="list-style-type: none"> <li>○ Being able to roll</li> <li>○ Disappearance of startle reflex</li> <li>○ Increased mobility (usually by 4–5months)</li> </ul> </li> <li>• Refer to Red Nose Information Statement: wrapping or swaddling babies<sup>31</sup></li> <li>• Remember with wrapping:               <ul style="list-style-type: none"> <li>○ Clear face, firm around the body, loose around the hips</li> </ul> </li> </ul>

### 3.3.1 Common questions regarding sleep space items

Table 12. Common questions regarding sleep space items

Aspect	Consideration
<b>Dummy (pacifier/soother)</b>	<ul style="list-style-type: none"> <li>• Dummy use at sleep time has been associated with a reduction in SUDI death rates<sup>32</sup>, however mechanisms are not fully understood</li> <li>• Opinions vary internationally regarding use as a specific SUDI risk reduction strategy</li> <li>• In Australia, there are no specific recommendations about use and safer sleep               <ul style="list-style-type: none"> <li>○ Support caregiver choice</li> <li>○ Refer to Red Nose Information statement: using a dummy or pacifier<sup>33</sup></li> </ul> </li> <li>• If used:               <ul style="list-style-type: none"> <li>○ Offer caregivers informed discussion regarding the benefits and risks<sup>33</sup></li> <li>○ Recommend introduction after breastfeeding established (4–8 weeks after birth) and stopping after 6–12 months of age</li> <li>○ Advise can be offered to formula fed infants from birth</li> <li>○ Offer at every sleep</li> <li>○ Remove cords/ribbon/strings from the dummy used for sleep to reduce strangulation risk</li> <li>○ Leave out if falls out during sleep</li> <li>○ Avoid coating dummy in sweeteners or other substances</li> <li>○ Clean often and replace regularly</li> </ul> </li> </ul>
<b>Apnoea monitors<sup>34</sup></b>	<ul style="list-style-type: none"> <li>• No evidence that apnoea monitors reduce the risk of SUDI<sup>33,35,36</sup></li> <li>• Monitors can               <ul style="list-style-type: none"> <li>○ Be disruptive for infants and families</li> <li>○ Produce false alarms, and have failed to alarm when SUDI has occurred<sup>37</sup></li> <li>○ Cause anxiety for caregivers</li> </ul> </li> <li>• Advise caregivers to seek advice from a medical practitioner before purchasing an apnoea monitor<sup>38</sup></li> <li>• Where an apnoea monitor is medically advised, recommend infant resuscitation training</li> </ul>

### 3.4 Infant products not specifically designed for sleep

Table 13. Infant products not designed for sleep

Aspect	Consideration
<b>Context</b>	<ul style="list-style-type: none"> <li>• Infant may fall asleep in products which have not been specifically designed for infant sleep               <ul style="list-style-type: none"> <li>○ Transport/carrying (e.g. prams, strollers, car seat/capsule, slings)</li> <li>○ Activities (e.g. bouncer, rockers, swings, play mats)</li> </ul> </li> <li>• SUDI has occurred while infants slept in these products<sup>27</sup></li> <li>• Infants in bouncers, strollers, swings and slings may be able to move into positions that could compromise their airway; straps do not prevent this</li> </ul>
<b>Risk mitigation</b>	<ul style="list-style-type: none"> <li>• Do not leave infant (awake or asleep) for long periods in the product even when supervised               <ul style="list-style-type: none"> <li>○ Remove and place infant in a safe, clear sleep space as soon as possible</li> <li>○ When using these products, closely supervise infants, particularly breathing and colour</li> </ul> </li> <li>• Use infant products as per manufacturer's instructions ensuring harnesses are used, where applicable</li> <li>• Ensure infant               <ul style="list-style-type: none"> <li>○ Cannot twist head into soft surface/bedding/toys or slump forward in a seat (e.g. avoid hammocks and swings)</li> <li>○ Face always visible when in a sling, car seat, capsule, bouncer, bouncy seat or swing</li> </ul> </li> <li>• Do not place car seats or bouncers on a soft or unstable surface</li> <li>• Refer to Section 3.4.1 T.I.C.K.S baby wearing safety guidelines</li> </ul>

### 3.4.1 T.I.C.K.S baby wearing safety guidelines

Follow T.I.C.K.S principles for safe sling and infant carrier use<sup>39</sup>

Table 14. T.I.C.K.S. baby wearing safety principles

Aspect	Consideration
<b>Tight</b>	<ul style="list-style-type: none"> <li>Keep slings and carriers tight enough to hug infant close               <ul style="list-style-type: none"> <li>This is most comfortable for wearer and infant</li> </ul> </li> <li>Slack/loose fabric allows infant to slump down in the carrier which can hinder infant's breathing and pull on the wearer's back.</li> </ul>
<b>In view at all times</b>	<ul style="list-style-type: none"> <li>Ensure infant's face can be viewed simply by glancing down</li> <li>Fabric of the sling or carrier is not close around infant such that it has to be moved to view the face</li> <li>In a cradle position, infant's face is upwards and not turned in towards wearer's body</li> </ul>
<b>Close enough to kiss</b>	<ul style="list-style-type: none"> <li>Infant's head is as close to wearer's chin as is comfortable for them</li> <li>Wearer can kiss infant's head or forehead by tipping their head forward</li> </ul>
<b>Keep chin off the chest</b>	<ul style="list-style-type: none"> <li>Infant is not curled such that their chin is forced onto their chest               <ul style="list-style-type: none"> <li>This can restrict their breathing</li> </ul> </li> <li>Maintain a space of at least a finger width under infant's chin</li> </ul>
<b>Supported back</b>	<ul style="list-style-type: none"> <li>In an upright carry, wearer holds infant comfortably close so their back is supported in its natural position and their tummy and chest are against wearer               <ul style="list-style-type: none"> <li>Reduces risk of chin to chest position</li> </ul> </li> <li>If a sling is too loose, infant may slump forward and partially close their airway               <ul style="list-style-type: none"> <li>Test by placing a hand on infant's back and pressing gently—infant should not uncurl or move closer to wearer</li> <li>This prevents sling folding infant in half and pressing chin to chest</li> </ul> </li> <li>Ensure head is supported until infant has gained sufficient head control to maintain their head in an upright position</li> </ul>

## 3.5 Multiple births

Table 15. Multiple births

Aspect	Consideration
<b>Context</b>	<ul style="list-style-type: none"> <li>Safer infant sleep messages apply to multiples as to singletons</li> <li>Many multiple birth infants are also premature and/or with low birth weight, placing them at greater risk of SUDI</li> <li>Many caregivers choose to sleep multiple birth infants on the same sleep surface (co-bedding) (e.g. in the same cot, particularly if they are room-sharing and have limited space)</li> </ul>
<b>Risk minimisation<sup>40,41</sup></b>	<ul style="list-style-type: none"> <li>Recommend separate sleep surfaces</li> <li>If infants are sleeping on the same sleep surface, recommend:               <ul style="list-style-type: none"> <li>Surface is large enough for two or more infants (e.g. standard size cot)                   <ul style="list-style-type: none"> <li>Small sleeping spaces (e.g. bassinet) can increase the risk of overheating or suffocation</li> </ul> </li> <li>Side by side sleeping only in the early weeks with infants not close enough to touch (to avoid airway obstruction)</li> <li>Sleeping at opposite ends of the cot</li> <li>Position infants 'feet to the foot' of the cot (one infant at each end of cot)</li> <li>Recommend individual infant sleep bags and avoid other bedding</li> <li>If these bedding options are not available, ensure individual bedding is firmly tucked in under the mattress</li> <li>Towels or pillows to divide the space between the infants are not used as suffocation risk</li> <li>Moving infants to their own sleep space once one infant has commenced rolling or demonstrates significant mobility</li> </ul> </li> <li>Discuss and demonstrate safe sleep messages and risk minimisation strategies prior to discharge</li> </ul>



## 4 Shared sleeping

### 4.1 Benefits and risks of shared sleep

Table 16. Benefits and risks of shared sleeping

Aspect	Consideration
<b>Benefits</b> <sup>12,42-44</sup>	<ul style="list-style-type: none"> <li>• Enhanced maternal-infant bonding and maternal responsiveness</li> <li>• Improved infant settling and reduced crying</li> <li>• Synchrony of maternal and infant sleep and arousal patterns</li> <li>• Increased frequency and duration of breastfeeding and reduced formula supplementation</li> <li>• Meeting family and cultural preferences regarding infant care practices</li> </ul>
<b>Risks</b> <sup>29,45-48</sup>	<ul style="list-style-type: none"> <li>• Shared sleeping increases the risk of SUDI in certain circumstances including:               <ul style="list-style-type: none"> <li>○ Antenatal and postnatal exposure to tobacco smoke</li> <li>○ Prone sleep position of infant</li> <li>○ Sedative effect from caregiver intake of alcohol, medicine or drugs</li> <li>○ Excessive fatigue of caregiver</li> <li>○ Soft sleep surfaces (e.g. pillows, doonas)</li> <li>○ Environments with entrapment hazards (e.g. sofas/couches and armchairs)</li> <li>○ Multiple bed-sharers, including siblings and pets</li> <li>○ Person with obesity sharing the sleep surface</li> <li>○ Infant movement is restricted (e.g. infant wrapped/swaddled)</li> </ul> </li> </ul>

### 4.2 Risk minimisation for safer shared sleep

Table 17. Risk minimisation strategies

Aspect	Strategies
<b>Infant</b>	<ul style="list-style-type: none"> <li>• Infant is not wrapped as this restricts arm and leg movement</li> <li>• If used, remove necklaces, hooded clothing before settling to sleep</li> <li>• Ideally, use an infant sleep suit or sleeping bag to keep infant warm and reduce need for additional bedding or use of adult bedding</li> </ul>
<b>Position</b>	<ul style="list-style-type: none"> <li>• Place infant on their back for every sleep</li> <li>• Place infant to the side of one parent               <ul style="list-style-type: none"> <li>○ Avoid placing infant between parents</li> <li>○ Avoid placing infant next to other children or pets</li> </ul> </li> </ul>
<b>Sleep surface</b>	<ul style="list-style-type: none"> <li>• Recommend               <ul style="list-style-type: none"> <li>○ Mattress is firm, flat and level</li> <li>○ Keep pillows and bedding positioned away from infant sleep space</li> <li>○ Avoid doonas and duvets as increases risk of accidental head covering</li> <li>○ Ideally provide infant with separate infant bedding or use an infant sleeping bag to avoid use of adult bedding</li> <li>○ Avoid use of any soft sleep surface for example bean bag, waterbed, sagging mattress, soft in-bed sleep devices or positioners</li> </ul> </li> <li>• Consider the size of the sleep surface in relation to the people sharing the space—is there enough room to create a safe clear space for infant sleep               <ul style="list-style-type: none"> <li>○ If not, recommend alternatives in the context of the family's circumstances</li> </ul> </li> </ul>
<b>Fall/entrapment</b>	<ul style="list-style-type: none"> <li>• To minimise risk of fall or entrapment, recommend               <ul style="list-style-type: none"> <li>○ Place infant away from edge of bed or place mattress on the floor</li> <li>○ Move bed or mattress away from wall so infant cannot become trapped/wedged between the bed and the wall</li> </ul> </li> </ul>
<b>Environment</b> <sup>49,50</sup>	<ul style="list-style-type: none"> <li>• Tie up caregiver's long loose hair</li> <li>• Remove caregiver jewellery, especially long necklaces</li> <li>• Falling asleep holding infant on a couch/chair is a major risk for infant suffocation through entrapment               <ul style="list-style-type: none"> <li>○ If considered a possibility, recommend caregivers move themselves and infant to a safer sleep environment (e.g. firm flat level mattress)</li> </ul> </li> </ul>

### 4.3 When shared sleep is not recommended

When shared sleeping is not recommended, support caregivers with alternative strategies to achieve a safe clear space for infant sleep.

Table 18. Shared sleep not recommended

Aspect	Strategies
<p><b>Not recommended if</b> 29,45-48,51</p>	<ul style="list-style-type: none"> <li>• Smoking in pregnancy due to infant’s reduced arousal responses</li> <li>• Household members smoke tobacco or e-cigarettes (even if they don’t smoke in the bedroom)</li> <li>• Caregivers                             <ul style="list-style-type: none"> <li>○ Have consumed alcohol prior to sleep</li> <li>○ Have taken medicines or drugs with a sedative effect</li> <li>○ Are extremely tired or unwell</li> </ul> </li> <li>• Infant is:                             <ul style="list-style-type: none"> <li>○ Premature (less than 37 weeks) and/or small for gestational age (2500 grams or less) due to limited ability to maintain airway patency</li> <li>○ Unwell with a medical condition affecting ability to maintain airway</li> </ul> </li> </ul>

### 4.4 Risk minimisation response model

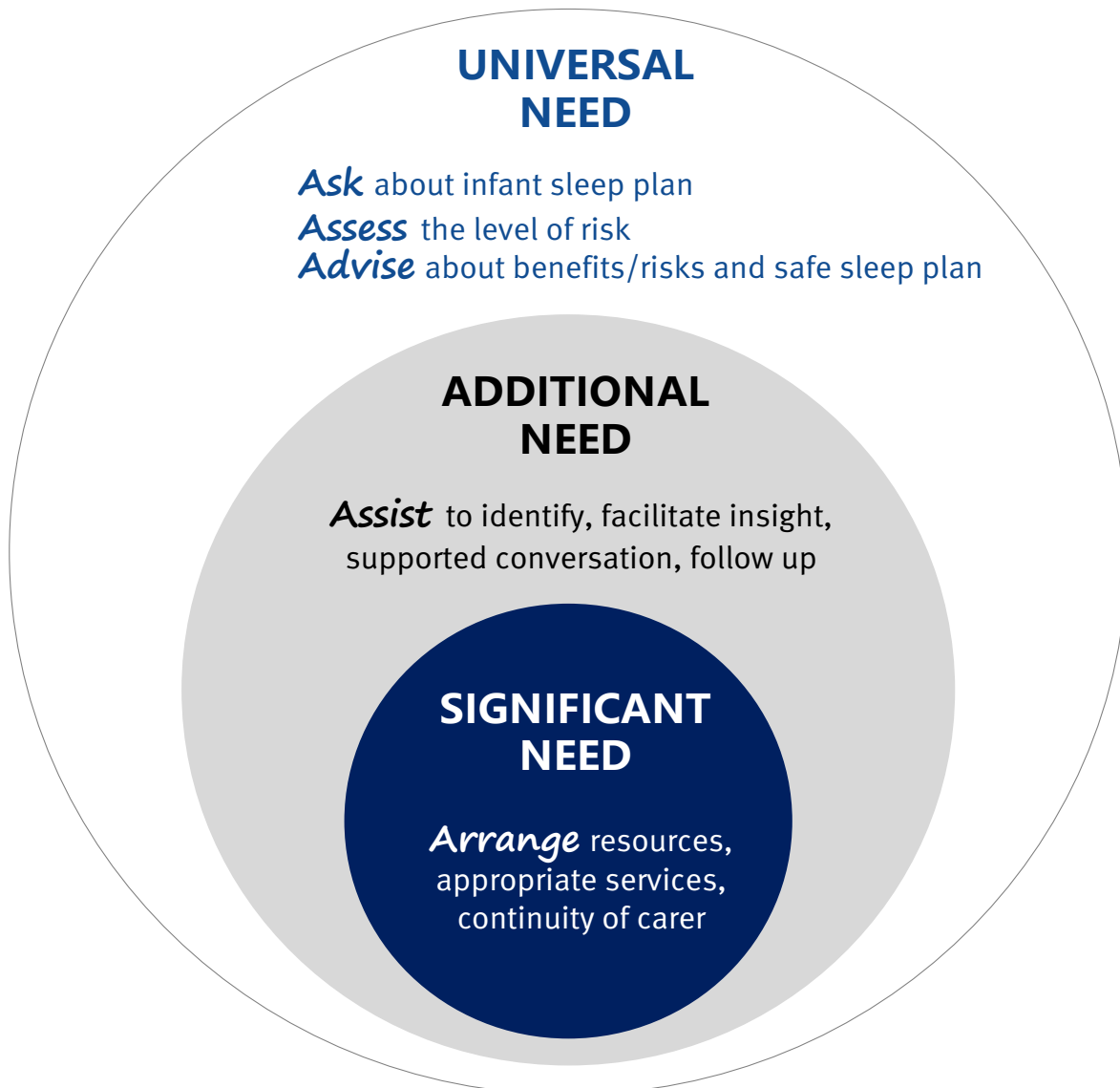


Figure 4. Risk minimisation response model

Adapted from the 5As model<sup>52,53</sup>

## 4.5 Risk minimisation model

WHO		ACTIONS
<b>Universal</b>	<p><b>All families</b></p> <p>Sharing sleep with an infant is a common and valued infant care practice in most cultures. Families share sleep with their infant for cultural, social and personal reasons. Shared sleep may be intentional, or occur unintentionally, if the caregiver falls asleep or has no other options to use as an infant sleep space.</p>	<ul style="list-style-type: none"> <li>• Ask</li> <li>• Assess level of risk</li> <li>• Advise                             <ul style="list-style-type: none"> <li>○ Provide clear and impartial information (written and verbal) to caregivers that includes benefits and strategies to reduce risk and increase safety associated with all infant sleep environments, including shared sleeping</li> <li>○ Troubleshoot strategies with families for situations that are relevant to them</li> <li>○ Provide advice on creating a 'safe sleep plan' to minimise risk</li> <li>○ Consider plans when travelling/visiting away from home</li> <li>○ Review as the infant's dynamic development interacts with the environment</li> </ul> </li> </ul>
<b>Additional need</b>	<p><b>Priority populations are:</b></p> <ul style="list-style-type: none"> <li>• Premature or small for gestational age infants</li> <li>• Caregivers/other household members who smoke (tobacco or e-cigarette)</li> <li>• Caregivers who regularly consume alcohol prior to sleep</li> <li>• Caregivers who use medicines or drugs that have a sedative effect</li> <li>• Caregivers who are unwell or extremely tired</li> <li>• Caregivers who have a mental health condition</li> </ul> <p><b>The need for more tailored interventions varies depending on</b></p> <ul style="list-style-type: none"> <li>• Infant vulnerability</li> <li>• Exposure to an external stressor (e.g. intercurrent respiratory infection)</li> <li>• Family circumstances</li> <li>• Interaction of these factors</li> </ul> <p><b>Use clinical judgement and reasoning to manage needs</b></p> <ul style="list-style-type: none"> <li>• With the family</li> <li>• With additional clinician support</li> <li>• With more targeted services</li> </ul>	<p>Follow actions outlined in <i>Universal</i> (Ask, Assess, Advise as above), plus <b>Assist</b></p> <ul style="list-style-type: none"> <li>• Identify if there is a separate sleep space at home (e.g. cot, bassinet); where possible observe this sleep space during a home visit or virtual consultation</li> <li>• Facilitate caregiver insight into the understanding of infant needs</li> <li>• Support strategies which parents have identified to increase safety</li> <li>• Support conversations with caregivers to further identify safe sleeping goals</li> <li>• Conversation prompts may include                             <ul style="list-style-type: none"> <li>○ How to keep the room that infant sleeps in smoke-free</li> <li>○ How to room-share with the infant safely</li> </ul> </li> <li>• Identify who parents could call on to help if extremely tired/unwell or planning to consume alcohol, medicine or drugs that may cause drowsiness</li> <li>• Include partners and other family members of household in conversations and planning where appropriate</li> <li>• Provide opportunity for verbal discussion to support safety strategies</li> <li>• Check understanding by asking carer to tell you in their words what the goals are</li> <li>• Recommend a follow up visit (with the same clinician if possible) within 2 weeks to review/revise the plan</li> </ul>
<b>Significant need</b>	<p><b>Priority populations include those where:</b></p> <ul style="list-style-type: none"> <li>• Risks are present and there is no safe sleep space identified in the home or other location (where the infant spends a considerable time sleeping)</li> <li>• Caregivers do not have the resources (personal or financial) to provide a safe sleep space</li> <li>• Caregivers/other household member's smoke (tobacco or e-cigarettes)</li> <li>• An alternative caregiver cannot be identified if primary caregiver has drug or alcohol issues of concern</li> <li>• Caregivers have ongoing mental health issues</li> <li>• Caregivers as determined by clinical judgement need more tailored safe sleep support based on individual needs (e.g. cognitive impairment)</li> </ul>	<p>Follow actions outlined in <i>Additional Need</i> (Ask, Assess, Advise, Assist), plus <b>Arrange</b></p> <ul style="list-style-type: none"> <li>• Explore with caregivers how to obtain resources needed, including permission to introduce family to specialist services (e.g. QUIT, support program/NGOs, Pēpi-Pod® Program, Kidsafe, or other local services who provide support)</li> <li>• Schedule regular home visits to refine goals and support family with implementation</li> <li>• Arrange culturally appropriate services where appropriate</li> <li>• Implement a continuity of carer model (a known carer to follow up with the family) to support continued engagement over time</li> <li>• Facilitate access to, and share information with, key stakeholders (e.g. Aboriginal and Torres Strait Islander Health Service, Intensive Family Support programs, Department of Child Safety, psychosocial support agencies) to support family with goals/safety plan – promote consistency across agencies</li> </ul>

## 5 Safer infant sleep in hospital settings

Recommendations in this guideline are intended to underpin local policies and procedures relevant to the care of infants in acute, hospital and community health care settings (including postnatal and neonatal units) within the resources available.

### 5.1 General principles for hospital settings

Table 19. Safer sleep in hospital and community residential

Aspect	Strategies
<b>Clinical standards</b>	<ul style="list-style-type: none"> <li>• Provide education to healthcare professionals about the importance of consistency when modelling and discussing safe sleep messages with caregivers</li> <li>• Develop facility specific procedures for safer infant sleep using a risk minimisation and strengths-base partnership approach with families</li> <li>• Implement strategies to support caregiver preferences wherever possible</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Medical care may require infants are slept in ways inconsistent with safer sleep messages (e.g. within neonatal units)               <ul style="list-style-type: none"> <li>○ Refer to Section 5.2 Medical conditions and infant sleep positions]</li> </ul> </li> <li>• Shared sleeping has similar benefits and risks as in other settings</li> <li>• Hospital and residential settings may have specific characteristics which place the infant at risk of SUDI in the shared sleep situation               <ul style="list-style-type: none"> <li>○ Smaller narrow beds</li> <li>○ Use of medications which may cause drowsiness or reduce maternal mobility and responsiveness (e.g. narcotic pain relief, epidural)</li> <li>○ Fatigued or unwell caregivers or infants</li> </ul> </li> </ul>
<b>Risk assessment</b>	<ul style="list-style-type: none"> <li>• Consider:               <ul style="list-style-type: none"> <li>○ Medical needs of the infant and/or caregiver</li> <li>○ Usual home practice relating to infant sleep and shared sleep</li> <li>○ Size of the bed in comparison to caregiver size (i.e. is there enough room for infant to sleep safely maintaining a clear airway and achieve a safe clear sleep space)</li> <li>○ Alertness or incapacity of the caregiver</li> </ul> </li> <li>• Resources available to facilitate parent preferences and provide safe care for infant and caregiver (e.g. equipment, staff)</li> <li>• The principles of <i>when to avoid shared sleeping</i> and <i>minimising the risk of shared sleeping</i> apply in hospital, residential/community home-settings</li> </ul>
<b>Clinical surveillance</b>	<ul style="list-style-type: none"> <li>• Implement close clinical surveillance and monitoring when medical care requires infants are slept in ways not consistent with sleep messages or shared sleep occurs               <ul style="list-style-type: none"> <li>○ Pulse oximetry in addition to routine observations as per local protocols</li> <li>○ Discuss why sleep positions may be different from general safe sleep messages and local policy and procedures</li> </ul> </li> <li>• If non-supine sleep or inclined sleep positions are used, consider cot cards or signs detailing why infant is sleeping that way</li> </ul>
<b>Discharge preparation</b>	<ul style="list-style-type: none"> <li>• Model safe sleep positioning and sleep space safety</li> <li>• Discuss and plan for safer infant sleep in the home setting prior to discharge regardless of:               <ul style="list-style-type: none"> <li>○ Parent intention for shared sleeping</li> <li>○ Inpatient facility recommendations</li> <li>○ Age of infant at discharge</li> </ul> </li> <li>• Recommend transition to a firm, flat, level sleep surface (applies to most infants, unless medically contraindicated and documented)</li> <li>• Provide caregivers with safe sleep recommendations for sleeping the infant at home that take account of individual circumstances               <ul style="list-style-type: none"> <li>○ Confirm understanding of rationales underpinning recommendations</li> <li>○ Consider specific strategies to address family needs and circumstances</li> </ul> </li> <li>• Refer to:               <ul style="list-style-type: none"> <li>○ Section 2 Supine is the safest sleep position</li> <li>○ Section 4 Shared sleeping</li> <li>○ Section Flow Chart: Risk mitigation pathway for non-supine and inclined sleep positions</li> </ul> </li> </ul>

## 5.2 Medical conditions and infant sleep positions

Table 20. Medical conditions and sleep positions

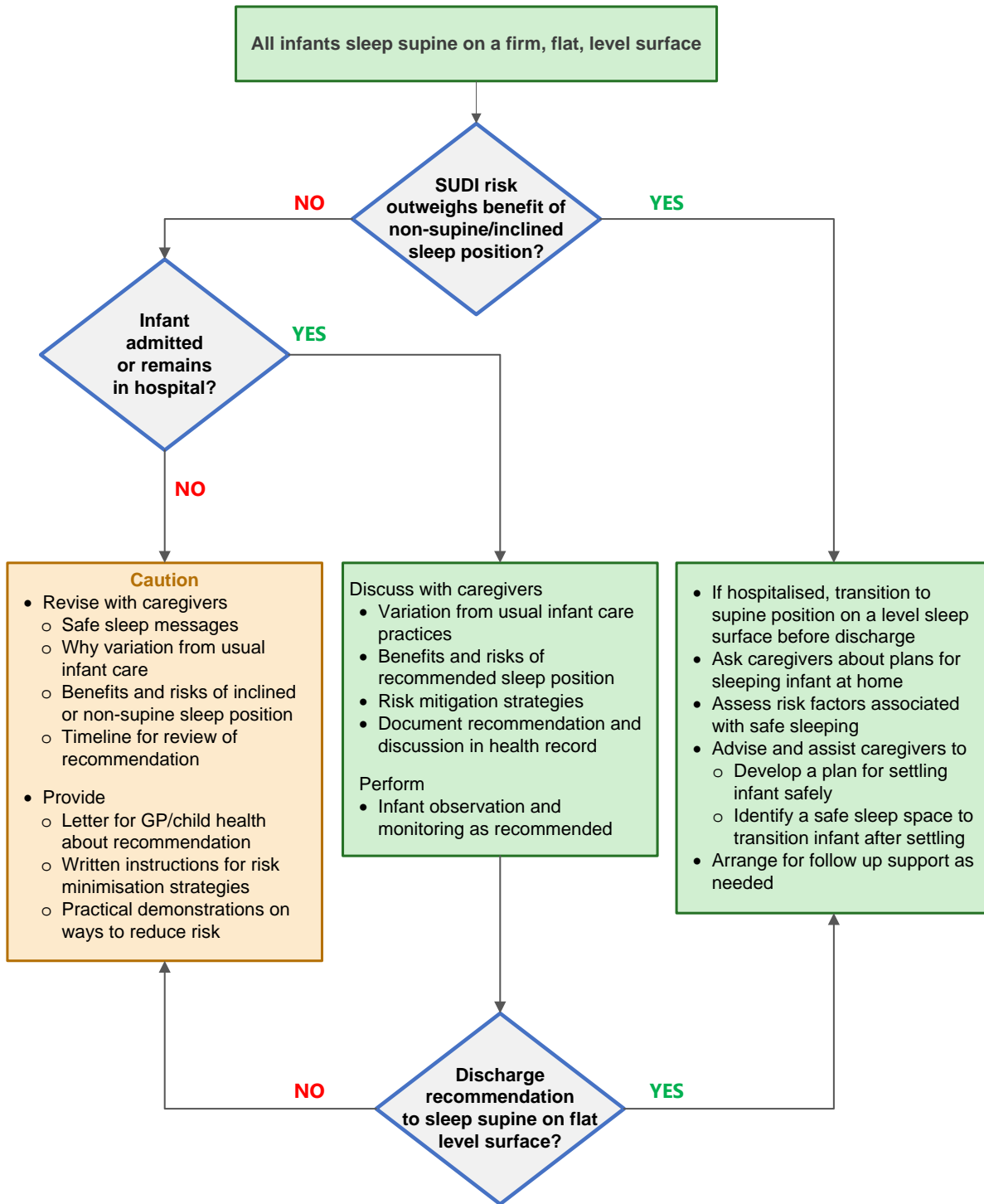
Aspect	Consideration
<b>Critical care and complex syndromes</b> <sup>54-56</sup>	<ul style="list-style-type: none"> <li>• Prone position may be medically recommended in the care of extremely premature and low birthweight infants               <ul style="list-style-type: none"> <li>○ Recommended only in a hospital in-patient setting with continuous monitoring and observation</li> </ul> </li> <li>• Prone position may improve airway patency for certain critical airway pathological conditions (e.g. Pierre Robin Syndrome, severe laryngomalacia, severe cleft palate or macroglossia)               <ul style="list-style-type: none"> <li>○ Gravity facilitates infant's tongue and jaw to fall forward away from the larynx</li> </ul> </li> <li>• Prone position may improve lung aeration during critical illness using mechanical ventilation to treat lung consolidation</li> <li>• Prone sleep position is an interim strategy and undertaken only in critical care unit with continuous observation and monitoring and/or specific medical advice with review plan in place</li> <li>• Refer to Flow Chart: Risk mitigation pathway for non-supine and inclined sleep positions for discharge considerations</li> </ul>
<b>Gastro-oesophageal reflux (GOR) and Gastro-oesophageal reflux disease (GORD)</b>	<ul style="list-style-type: none"> <li>• Recommend the supine sleep position on a firm flat level surface<sup>2</sup> <ul style="list-style-type: none"> <li>○ In the supine position, regurgitated milk is less likely to enter the trachea as the trachea sits above the oesophagus in the supine position<sup>3</sup></li> <li>○ Refer to Figure 1. SUDI and Triple Risk Model</li> </ul> </li> <li>• Inclined sleep position is not effective in reducing GOR and is not recommended in any setting due to the increased risk of SUDI including positional asphyxiation<sup>24,57</sup></li> <li>• Prone or side lying sleep positions are not recommended for symptom management unless recommended by the infant's medical practitioner</li> </ul>
<b>Upper respiratory tract Infection (URTI) and bronchiolitis</b>	<ul style="list-style-type: none"> <li>• Recommend the supine sleep position on a firm, flat, level surface               <ul style="list-style-type: none"> <li>○ Inclined position does not improve oxygenation in bronchiolitis<sup>56</sup></li> <li>○ Inclined position not recommended by current paediatric management guidelines<sup>1</sup></li> </ul> </li> </ul>

### 5.3 Medically recommended non-supine or inclined sleep positions

Table 21. Medically recommended non-supine or inclined sleep position

Aspect	Consideration
<b>Context</b>	<ul style="list-style-type: none"> <li>• Non-supine or inclined sleep position may be recommended for specific conditions (e.g. pathological abdominal distension compromising diaphragm descent or serious congenital airway abnormalities)</li> <li>• Usually hospitalisation is required for safe respiratory management</li> </ul>
<b>When medically recommended</b>	<ul style="list-style-type: none"> <li>• Document in the health record (e.g. medical record, personal health record (Red Book)):               <ul style="list-style-type: none"> <li>○ Reason/rationale for recommendation</li> <li>○ Intended review date of recommendation</li> <li>○ Details of the caregiver-health care professional discussion that has occurred about risks and benefits</li> </ul> </li> <li>• Offer information about the benefits and risks of inclined sleep position               <ul style="list-style-type: none"> <li>○ Where possible, include practical demonstrations on how to minimise risk</li> </ul> </li> </ul>
<b>Risk mitigation strategies</b>	<ul style="list-style-type: none"> <li>• The surface remains firm, flat and level</li> <li>• If inclined sleep position is recommended               <ul style="list-style-type: none"> <li>○ The whole cot/crib/bassinet is raised at one end</li> <li>○ The slope of the incline is not greater than 7 degrees from horizontal<sup>21</sup></li> <li>○ Pillows or wedges are not used to place the infant on an incline</li> </ul> </li> <li>• Shared sleeping is not recommended in circumstances where the infant is placed in a non-supine or inclined position for a medical reason</li> <li>• Regularly review recommendation to ensure it remains appropriate to infant's health status and growth and developmental needs</li> <li>• All other recommendations of creating a safe sleep space apply</li> </ul>
<b>At home</b>	<ul style="list-style-type: none"> <li>• Consider whether the risks of SUDI outweigh any benefits of an inclined or non-supine sleep position</li> <li>• Provide documentation/letter to the caregiver for other care providers (e.g. GP and child health nurse) about the recommendation and the timeline for review</li> <li>• Provide information about benefits and risk of inclined or non-supine sleep position</li> <li>• Offer practical demonstrations on ways to minimise the risk of inclined or non-supine sleeping</li> </ul>

5.3.1 Flow Chart: Risk mitigation pathway for non-supine and inclined sleep positions



Flowchart: F22.71-2-V1-R27

GP: general practitioner

## 6 Infant development and risk of SUDI

The risk of SUDI changes as an infant dynamically develops during the first year of life.<sup>30,58,59</sup> Refer to Section 2 Supine is the safest sleep position and Section 3 Safe clear space for infant sleep information relevant to all infants.

Table 22. Infant development and targeted messaging

Aspect	Consideration by age range
0–3 months	<b>Infant development</b> <ul style="list-style-type: none"> <li>• Most cannot roll at this age</li> <li>• Can move head to side or maintain head in midline when placed supine</li> <li>• Begin to be able to raise their head when placed prone for 'tummy time'</li> </ul>
	<b>Safer sleep considerations</b> <ul style="list-style-type: none"> <li>• If placed on a firm, flat, level surface to sleep, most tend to stay in the position in which they were placed</li> <li>• If sharing a sleep surface, may roll passively due to changes in adult posture, especially if the surface or bedding is soft and/or inclined</li> <li>• Are unable to remove objects that may cover their face as they move their face or head during sleep (e.g. hats, hoodies, pillows, bedding/coverings that are not tucked in firmly, soft toys)</li> <li>• Although infants may begin to raise their head when placed prone, they cannot do so for long periods <ul style="list-style-type: none"> <li>○ If placed prone with head to the side for sleep, may raise their head and drop face down into bedding; subsequently being unable to lift their head out of a challenging environment<sup>60</sup></li> </ul> </li> <li>• Discontinue wrapping at first signs of rolling (prone to supine usually occurs first)</li> <li>• When startle reflex disappears, ensure arms are free from wrap</li> <li>• Do not prop feed or leave feeding bottles in the sleep space</li> </ul>
4–5 months	<b>Infant development</b> <ul style="list-style-type: none"> <li>• Most learn to roll prone to supine</li> <li>• Arm and leg movements become stronger, pushing with legs more common</li> <li>• Can change posture during sleep and be unable to extricate themselves</li> </ul>
	<b>Safer sleep considerations</b> <ul style="list-style-type: none"> <li>• Do not place additional loose items or soft bedding in an infant's sleep space (e.g. pillows, toys)</li> <li>• Discontinue infant wrapping at first signs of infant rolling</li> <li>• Tuck sheets and blankets in firmly</li> <li>• Alternatives <ul style="list-style-type: none"> <li>○ Do not use bedding and instead dress in warmer clothing</li> <li>○ Use a safe infant sleeping bag (fitted neck and arm holes, no hood)</li> </ul> </li> </ul>
6 months and beyond	<b>Infant development</b> <ul style="list-style-type: none"> <li>• Motor skills rapidly develop as infants learn to roll supine to prone, pivot laterally, sit, crawl and pull to stand</li> <li>• Very unlikely infant will stay stationary during sleep time</li> <li>• May wake, move and even play and then fall back asleep</li> </ul>
	<b>Safer sleep considerations</b> <ul style="list-style-type: none"> <li>• A safe, clear space for sleep continues to be important at this age</li> <li>• Becomes more mobile and may interact with objects in the sleep environment, increasing the risk of entrapment, airway compromise and/or suffocation <ul style="list-style-type: none"> <li>○ Blankets, doonas, loose bedding and pillows are of particular risk for older infants as they move more</li> <li>○ May become entangled but are not yet coordinated enough to free themselves<sup>30</sup></li> </ul> </li> <li>• Tuck sheets and blankets in firmly or use a safe infant sleeping bag</li> <li>• Do not place additional toys/transitional objects in cot with infants under seven months <ul style="list-style-type: none"> <li>○ The risk of suffocation from soft objects outweighs any benefit obtained from the presence of a soft toy or transitional object</li> </ul> </li> <li>• Remove infant necklaces (e.g. teething, herbal spiritual/cultural) for sleep times</li> <li>• Thoroughly check the sleep space for access to cords (such as blind, electrical or charger cords), ribbons, mobiles or decorations which may pose a strangulation risk</li> </ul>



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**Appendix A: Commonly used terminology relevant to shared sleeping**

<b>Terminology</b>	<b>Brief definition</b>	<b>Description</b>
<b>Shared sleeping</b>	A mother and/or their partner (or any other person) being asleep on the same surface as the infant	This definition is inclusive of all environments that an adult or child may be asleep on the same surface as an infant. Shared sleeping includes the practices of bed-sharing, sofa-sharing and co-sleeping on the same sleep surface. This terminology allows differentiation of the risks associated with solitary sleeping (sleeping infant in a separate room), room-sharing and environments in which infant and caregivers or others share the same sleep surface in which risk factors and levels of risk are dependent on context and circumstances.
<b>Co-sleeping*</b>	A mother and/or their partner (or any other person) being asleep on the same sleep surface as the infant	For the purposes of providing a definition that allows risk factors and levels of risk to be differentiated within and between different shared sleep environments, in both home and clinical settings, the term co-sleeping has been differentiated from bed-sharing, consistent with the definition provided by UNICEF.  In the literature, some authors have used the anthropological definition of co-sleeping which considers the infants viewpoint and includes both bed-sharing and room sharing practices due to the similar exchange of sensory stimuli which is possible between infant and caregiver in these sleep environments.
<b>Bed-sharing*</b>	Bringing infant onto a sleep surface when co-sleeping is possible, whether intended or not	Although co-sleeping and bed sharing are often used interchangeably by clinicians, the important differentiation made using this definition is that with bed sharing the adult may be awake, or intend to be awake, rather than both adult and infant being asleep. For example, a postnatal mother may bring infant into bed in the clinical environment to breastfeed or spend time skin-to-skin (bed-share), however may not intend to fall asleep with infant (co-sleep) while under the influence of sedating pain medication.
<b>Room-sharing*</b>	Sleeping the infant in a cot or other separate sleeping surface in the same room as the parents	A caregiver sharing the same room as infant during the first 6-12 months of life has been associated with a reduced risk of SUDI. Recommended by peak bodies such as Red Nose, American Academy of Pediatrics and Lullaby Trust.
<b>Sofa-sharing*</b>	A mother and/or their partner (or any other person) being asleep on a sofa or couch with the infant	*Sofa-sharing has a very high risk of entrapment and mechanical suffocation and is not recommended. Sofa-sharing has been included in some 'bed-sharing analyses' in the literature. However current best practice suggests that different shared sleep environments need to be differentiated from each other due to the different risk factors and levels of risk associated

Source: \*Red Nose. National Scientific Advisory Group (NSAG). Information statement: why back to sleep is the safest position for your baby. 2016. Available from: <https://rednose.org.au> and Australian College of Midwives. Position Statement for bed Sharing and co-sleeping. 2014. Available from: <https://www.midwives.org.au>.

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