



# **Sharing a Sleep Surface with an Infant in the First Year of Life A Rapid Review**

Ava Nainifard, Analyst, Research & Policy  
Elizabeth Walker, Analyst, Research & Policy  
Eileen Vilorio-Tan, Acting Manager

*November 2018*

## Table of Contents

---

<b>Key Messages .....</b>	<b>2</b>
<b>Executive Summary .....</b>	<b>3</b>
<b>1 Issue.....</b>	<b>5</b>
<b>2 Context.....</b>	<b>6</b>
<b>3 Literature Review Question.....</b>	<b>7</b>
<b>4 Literature Search.....</b>	<b>8</b>
<b>5 Relevance Assessment .....</b>	<b>8</b>
<b>6 Results of the Search .....</b>	<b>9</b>
<b>7 Critical Appraisal.....</b>	<b>9</b>
<b>8 Description of Included Literature.....</b>	<b>9</b>
<b>9 Synthesis of Findings.....</b>	<b>10</b>
<b>10 Applicability and Transferability .....</b>	<b>14</b>
<b>11 Recommendations .....</b>	<b>17</b>
<b>Text References .....</b>	<b>21</b>
<b>Data Reference .....</b>	<b>25</b>
<b>Appendix A: Infant Deaths in Peel and Ontario.....</b>	<b>26</b>
<b>Appendix B: Search Strategy.....</b>	<b>28</b>
<b>Appendix C: Literature Search Flowchart.....</b>	<b>32</b>
<b>Appendix D: Data Extraction Table.....</b>	<b>33</b>
<b>Appendix E: Studies Included in the National Institute for Health and Care Excellence Guideline .....</b>	<b>39</b>
<b>Appendix F: Decision-Making for Safer Infant Sleep .....</b>	<b>51</b>

## Key Messages

1. Infants less than three months of age sharing a bed to sleep are at increased risk of sudden infant death syndrome (SIDS).
2. Infants less than one year of age sharing a couch or chair to sleep are at increased risk of SIDS.
3. Infants between three to 12 months of age and co-sleeping (i.e. sharing a bed, couch or chair to sleep) are at increased risk of SIDS if the:
  - a. Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
  - b. Infant was born premature (<37 weeks gestation) or had low birth weight (<2,500g).

# **Executive Summary**

## **Research Question**

What are the effects of co-sleeping (i.e. sharing a bed, couch or chair to sleep) with an infant in the first year of life?

## **Context**

The Region of Peel – Public Health’s messaging on co-sleeping is different from that of the Public Health Agency of Canada. Different messaging leads to confusion for Family Health staff, especially in the Healthy Babies Healthy Children Home Visiting program.

## **Methods and Results of the Literature Review**

A search for published and grey literature yielded 105 articles. After assessing relevance, quality and completeness of reported methodology, one strong quality National Institute for Health and Care Excellence (NICE) guideline was included. The guideline examined the risk of co-sleeping (i.e. sharing a surface to sleep such as a bed, couch or chair) with an infant in the first year of life and sudden infant death syndrome (SIDS). The guideline’s included evidence was summarized to examine the relationship between co-sleeping and SIDS in the first year of life.

## **Synthesis of Findings**

Sharing a bed to sleep with an infant less than three months of age increases the risk of SIDS. Sharing a couch or chair to sleep with an infant less than one year of age also increases the risk of SIDS. Co-sleeping with an infant between three and 12 months of age increases the risk of SIDS if the parent or caregiver smokes, consumes alcohol or uses drugs, or if the infant was born premature or had low birth weight.

## Recommendations

Region of Peel – Public Health staff should:

1. Educate clients about the association between co-sleeping and SIDS, including:
  - Infants less than three months of age sharing a bed to sleep are at increased risk of SIDS.
  - Infants less than one year of age sharing a couch or chair to sleep are at increased risk of SIDS.
  - Infants between three to 12 months of age and co-sleeping (i.e. sharing a bed, couch or chair to sleep) are at increased risk of SIDS if the:
    - Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
    - Infant was born premature (<37 weeks gestation) or had low birth weight (<2,500g).
2. Educate clients prenatally and first year postpartum about co-sleeping and SIDS.
3. Discuss clients' intentions to co-sleep with an infant in the first year of life. Do not make assumptions about why clients co-sleep with an infant.
4. Encourage clients to place the infant to sleep on a separate sleep surface (e.g. crib or cradle) meeting Health Canada's safety regulations if the:
  - Infant is less than three months of age.
  - Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
  - Infant was born premature or had low birth weight.
5. Problem solve with clients and community partners to secure access to resources that foster a safer sleep environment for infants.

# 1 Issue

A research review examining the risks and benefits of bed sharing with an infant in the first year of life was conducted in 2012 by Family Health staff (1) informing the Region of Peel – Public Health’s policy ([FH4-065](#)) (2) and nursing practice standards. (3) The research review was initiated when the Public Health Agency of Canada (PHAC) and the Office of the Chief Coroner in Ontario recommended that parents do not sleep on a bed with their infant as it increases the risk of sudden unexpected death in infants. (1,4,5) The research review established the messaging currently used by the Region of Peel – Public Health. Specifically, the Region of Peel – Public Health does not support infants sharing certain surfaces to sleep (e.g. couch, pillows, sofa or chair) and beds when risk factors are present (e.g. infants under 12 weeks of age, mothers who smoked during or after pregnancy, or parents who consumed alcohol or used drugs). (3)

In September 2017, the Region of Peel – Public Health became aware that Peel Children’s Aid Society (CAS) adopted PHAC’s safer sleep messaging. Different safer sleep messaging leads to confusion for Family Health staff, especially in the Healthy Babies Healthy Children (HBHC) Home Visiting (HV) program.

PHAC is updating the Joint Statement on Safe Sleep (6) in collaboration with the Canadian Paediatric Society, which is expected for release in 2019. (7)

The aim of this research review is to examine the effects of co-sleeping (i.e. sharing a bed, couch or chair to sleep) with an infant in the first year of life to inform Family Health policy and key messages.

## 2 Context

The rate of SIDS among infants under one year of age in Ontario has decreased over time (Appendix A.1).

Between 1986 to 2012, the rate of SIDS in Peel was lower than in Ontario (Appendix A.2). Between 2008 to 2012 combined, the rate of accidental suffocation and strangulation deaths in bed was one per 100,000 infants in both Peel and Ontario.<sup>A</sup> More recent data on SIDS in Peel and Ontario is not available.

The decrease in SIDS as a manner of death may be attributed to coroners increasingly classifying infant deaths as “undetermined.” (9,10) In 2014 and 2015, the Office of the Chief Coroner reviewed 97 deaths of infants less than one year of age in Ontario. There were 40 “undetermined” deaths, of which 32 were a result of an unsafe sleep environment (16 infants) and bed sharing (16 infants). One infant also experienced an “accidental” death due to an unsafe sleep environment. (9)

During a discussion in 2012, public health nurses in Peel stated:

- “Many mothers at the homeless shelter use the crib for storage and sleep with their baby. Even when a crib is provided they prefer to sleep with their baby.”
- “Poverty is an issue for some families. They don’t have cribs so [they] sleep with their babies on a mattress on the floor.”
- “I am not sure what to tell clients who don’t have the means to have a crib in their bedroom. Shouldn’t we help clients to make the choice that makes sense for them?”

- “In the breastfeeding clinics, we ask where the baby is being fed. Women often tell us that they feed the baby in their bed.” (1)

Research indicates that bed sharing between a mother and infant is associated with increased breastfeeding rates. (11)

A recent study of sleep-related infant deaths over a 10 year period in the United States found that infants who died under non-parental supervision (e.g. friends and relatives) were more often placed on an adult bed or couch for sleep, and bed sharing ( $p < 0.0001$ ). (12)

Bed sharing and co-sleeping are defined differently across the literature. (13,14) The definitions used in this research review are:

- Bed sharing: sharing an adult bed to sleep. (14)
- Co-sleeping: sharing a surface to sleep such as a bed, couch, or chair. (14)

### **3 Literature Review Question**

The question for this research review update is:

What are the effects of co-sleeping with an infant in the first year of life?

The PECO includes:

- Population: infants under one year of age
- Exposure: co-sleeping (i.e. sharing a bed, couch or chair to sleep)
- Comparator: no co-sleeping
- Outcome: sudden infant death



## **4 Literature Search**

A librarian specialist repeated the search strategy used in the 2012 research review to identify literature published from January 2011 to September 18, 2017 (Appendix B).

Two reviewers conducted a search for grey literature in:

- Government websites: PHAC, Health Canada, Region of Peel, and Centers for Disease Control and Prevention.
- Other websites: National Institute for Health and Care Excellence (NICE), Best Start, DynaMed, Canadian Paediatric Society, Registered Nurses Association of Ontario, Perinatal Services British Columbia, National Guideline Clearinghouse, Centre for Reviews and Dissemination, TRIP, and the National Institute of Child Health & Human Development.

## **5 Relevance Assessment**

Two reviewers developed the inclusion and exclusion criteria and independently screened titles for potential relevance. The decision rule to resolve conflicts was at least one reviewer had to consider the article relevant for full text review. Articles were assessed based on the following criteria:

- Inclusion: infants up to one year of age, co-sleeping associated with sudden infant death, home setting, guidelines or reviews published in English since 2011, and settings similar to Canada
- Exclusion: data duplication

## **6 Results of the Search**

The search yielded 105 articles from published and grey literature sources. After removing duplicates and screening titles, eight articles were reviewed in full text. Four articles were relevant and selected for critical appraisal (Appendix C).

## **7 Critical Appraisal**

Two reviewers critically appraised four guidelines (14-17) independently using the AGREE II Guideline Appraisal Tool. (18) Conflicts in ratings were discussed until consensus was reached. Total scores were calculated by averaging scores within each domain of the critical appraisal tool. Guidelines were included if they rated a minimum score of 4/7 (i.e. moderate or strong quality) and had a clear description of their methodology.

Three guidelines were rated as moderate quality but were excluded as they lacked a sufficient description of their methods. (15-17) One guideline, (14) rated as strong quality, was included.

## **8 Description of Included Literature**

This research review update includes the following guideline:

**NICE. (2014): *Addendum to Clinical Guideline 37, Postnatal Care: Routine postnatal care of women and their babies* (14)**

The objective of the guideline, rated as strong (6/7), was to examine the risk of co-sleeping (i.e. sharing a sleep surface such as a bed, couch, or chair) with an infant in the first year of life and SIDS. (14) Studies were limited to the home setting and comparators were infants who did not co-sleep.

The guideline did not fully describe the included evidence and the 14 individual studies were examined further. Twelve single studies summarized co-sleeping and SIDS risk factors, (19-28) and infant sleep practices. (29,30) One meta-analysis of five studies examined the risk of SIDS when bed sharing with a parent who does not smoke. (31) A second meta-analysis of two studies examined the risk of co-sleeping without risk factors. (32) Included studies were assessed for quality by guideline developers using a modified version of GRADE. All studies were low quality and had a high risk of bias (14) (Appendix D). Details of included studies are provided in Appendix E.

## **9 Synthesis of Findings**

The evidence suggests a positive association between co-sleeping on certain surfaces and SIDS (Table 1).

**Table 1. Co-sleeping risk factors associated with SIDS among infants <1 year of age.**

Co-sleeping Surface	Infant Age	Risk Factor	Association with SIDS
Bed	<3 months	No additional risk factors	IR
		Parental smoking, alcohol consumption or drug use	IR
		Infant was born premature or had low birth weight	IR
	>3 months	No additional risk factors	NDD
		Parental smoking, alcohol consumption or drug use	IR
		Infant was born premature or had low birth weight	IR
Couch or chair	<1 year	No additional risk factors	IR
		Parental smoking, alcohol consumption or drug use	IR
		Infant was born premature or had low birth weight	IR

SIDS – sudden infant death syndrome

IR – increased risk of SIDS

NDD – no difference detected for risk of SIDS

See Appendix F for decision-making on safer infant sleep.

**Infants less than three months of age sharing a bed to sleep are at increased risk of SIDS.**

Infants sharing a bed to sleep without additional risk factors (e.g. no parental smoking and supine position) in the first three months of life had five times the odds of SIDS compared to room sharing infants (adjusted odds ratio [AOR]: 5.1, 95% confidence interval [CI]: 2.3 to 11.4). (31) Infants older than three months of age who shared a bed to sleep without additional risk factors did not have increased odds of SIDS compared to room sharing infants. (25,26,31)

**Infants less than one year of age sharing a couch or chair to sleep are at increased risk of SIDS.**

Infants sharing a couch or chair to sleep in the first year of life had 18 times the odds of SIDS compared to infants who did not co-sleep (AOR: 18.29, 95% CI: 7.10 to 47.35,  $p < 0.0001$ ). (32)

**Infants less than one year of age co-sleeping with a parent who smokes are at increased risk of SIDS.**

Infants at 10 weeks of age (i.e. within first three months of life) sharing a bed to sleep with a mother or partner who smokes had 20 and eight times the odds of SIDS, respectively, compared to infants room sharing without additional risk factors (e.g. no parental smoking or alcohol or drug use) (AOR with mother: 20.4, 95% CI: 8.9 to 47.7 and AOR with partner: 7.6, 95% CI: 3.8 to 15.1). (31)

The increased risk of SIDS persists but reduces with age. Infants at 20 weeks of age (i.e. within first five months of life) sharing a bed to sleep with a mother or partner who smokes had seven and three times the odds of SIDS, respectively, compared to infants room sharing without additional risk factors (e.g. no parental smoking or alcohol or drug use) (AOR with mother: 7.1, 95% CI: 2.8 to 18.0 and AOR with partner: 2.6, 95% CI: 1.2 to 6.0). (31)

One single study confirms increased odds of SIDS in the first year of life when a mother who smokes co-sleeps with her infant (AOR: 8.50, 95% CI: 1.57 to 45.99). (24)

**Infants less than one year of age co-sleeping with a parent who has recently consumed alcohol or used drugs are at increased risk of SIDS.**

*Alcohol use:* Infants at 20 weeks of age (i.e. within first five months of life) sharing a bed to sleep with a mother who consumed two or more units of alcohol in the last 24 hours had 14 times the odds of SIDS compared to infants room sharing without additional risk factors (e.g. no parental smoking or drug or alcohol use in the last 24 hours) (AOR for infants 10 weeks of age: 38.6, 95% CI: 12.6 to 117.8 and AOR for infants 20 weeks of age: 13.5, 95% CI: 4.6 to 39.4). (31)

*Alcohol or drug use:* The interaction between co-sleeping with an infant in the first year of life and a parent consuming alcohol or using drugs increased the odds of SIDS 53 times compared to infants who did not co-sleep and did not have additional risk factors (i.e. no parental alcohol or drug use) (AOR: 53.26, 95% CI: 4.07 to 696.96). (21)

**Infants less than one year of age who were born premature (<37 weeks gestation) or had low birth weight (<2,500g) and co-sleeping are at increased risk of SIDS.**

Infants who were born premature or had low birth weight and co-sleeping in the first year of life had five and eight times the odds of SIDS, respectively, compared to room sharing infants who were not born premature or did not have low birth weight (AOR for infants born premature: 5.09, 95% CI: 2.30 to 11.27,  $p < 0.001$  and AOR for infants who had low birth weight: 7.96, 95% CI: 3.25 to 19.48,  $p < 0.001$ ). (20)

## 10 Applicability and Transferability

### Applicability and Transferability Meeting

A meeting was held on December 8, 2017 with internal and external stakeholders<sup>1</sup> to discuss the applicability and transferability of the research review's draft findings to Peel's local context. The applicability and transferability tool adapted from the National Collaborating Centre for Methods and Tools was used to guide the discussion. (33)

Key points from the facilitated discussion include:

- **Political acceptability:** The issue of infant safety is within the scope of the Region of Peel – Public Health strategic program priority Nurturing the Next Generation. (34)
- **Social acceptability:** Co-sleeping is influenced by ethno-cultural and family practices. Stakeholders commented that families may continue to co-sleep with their infants after teaching on safer sleep has been provided. It is expected that some parents may continue to co-sleep with their infant in absence of risk factors after receiving teaching on safer sleep (e.g. safe infant temperature or no soft materials near the infant during sleep).

Peel CAS representatives commented that caseworkers provide safer sleep education to every family with an infant in the initial and subsequent visits. Teaching is reinforced when risk factors are identified. Caseworkers also assess the crib for safety concerns.

---

<sup>1</sup> Stakeholders included Healthy Babies Healthy Children management, public health nurses and family visitors, Breastfeeding and Reproductive Health public health nurses, and Peel CAS representatives.

Stakeholders noted that messaging for parents and caregivers should be non-judgemental, simple in language to foster understanding, and translated in languages reflective of Peel's population. Health care professionals should continue to reinforce teaching about safer sleep for infants as clients may be unfamiliar with co-sleeping associated harms.

- **Reach:** Community stakeholders should be informed of the Region of Peel – Public Health's messaging to optimize client reach. Community stakeholders include community service providers, government partners (e.g. Ontario Works) and family shelter staff.
- **Target population characteristics:** The rate of preterm and low birth weight infants in Peel from 2007 to 2011 was approximately eight per 100 live births, (35,36) and is higher than Ontario's rate. (37) Infants born to some immigrant mothers (e.g. South or East Asian) have a lower median birth weight compared to Canadian-born mothers. Thirty-one per cent of live births in Peel were to South Asian-born mothers in 2011. (37)

Some segments of the population may be less accepting of messaging on avoiding co-sleeping with an infant in the first year of life. Some parents may prefer to co-sleep with their infant as they are unprepared for sleep deprivation, rely on inaccurate safer sleep information from the internet or peers, or follow previously used sleep practices (e.g. prone position or bumper pad use). Low income parents may also experience financial challenges with purchasing a crib.



- **Resources:** Funding to assist clients with purchasing a crib is available on a limited basis from some community partners. Families may receive funding to purchase a crib, however they may purchase another item instead and continue to co-sleep with their infant. Clients with financial challenges may use alternative means for infant sleep that are safer than infant co-sleeping (e.g. crib mattress on the floor).

Stakeholders acknowledged there would be additional costs required to produce or purchase print material in languages reflective of Peel's population.

In summary, stakeholders agreed that families choose to co-sleep for different reasons and that education provision fosters safer infant sleep and harm reduction. Having translated material in print and on the Region of Peel – Public Health website would be helpful in disseminating safer infant sleep messaging.

### **Additional Information Related to Social Acceptability**

Messaging on co-sleeping with an infant generates mixed opinions from the public. Recently, the Region of Peel – Public Health and Hamilton Public Health Services shared different bed sharing and co-sleeping messaging, respectively, that evoked strong responses on social media.

On February 27, 2018, the Family Health Division's Multichannel Contact Centre shared safe bed sharing tips derived from the 2012 research review on the Parenting in Peel Facebook page. (38) Most commenters opposed the message as they perceived it to risk infant safety and encourage an unsafe sleep environment. Opponents used the American Academy of Pediatrics and PHAC recommendations as supporting evidence,

and challenged the cultural and socioeconomic factors influencing a family's decision to bed share. In contrast, proponents of the message commented that bed sharing is a common cultural practice, can be done safely in the absence of risk factors, and should be an informed decision made by parents.

On March 7, 2018, Hamilton Public Health Services stated that “[co-sleeping]... can never be made safe” and asked the public why they think co-sleeping is unsafe on the Healthy Families Hamilton Facebook page. (39) Twenty-five per cent of the comments were reviewed due to the large number of responses. Most individuals did not support the message and stated that “bed sharing” is common practice and can be done safely in the absence of risk factors. Others commented that the message was fear-generating, parent-shaming, and did not facilitate informed decision-making or harm reduction to help parents bed share safely. Supporters of the message commonly stated that “bed sharing” is unsafe and that adult beds are unsafe sleep surfaces. Individuals on both sides of the debate challenged each other's evidence.

## **11 Recommendations**

The Region of Peel – Public Health should provide parent education on the association between co-sleeping and SIDS to foster informed decision-making. (14) Based on the findings of this research review, individual client and population level recommendations include:

## Individual Client Level

Region of Peel – Public Health staff should:

1. Educate clients about the association between co-sleeping and SIDS, including:
  - Infants less than three months of age sharing a bed to sleep are at increased risk of SIDS.
  - Infants less than one year of age sharing a couch or chair to sleep are at increased risk of SIDS.
  - Infants between three to 12 months of age and co-sleeping (i.e. sharing a bed, couch or chair to sleep) are at increased risk of SIDS if the:
    - Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
    - Infant was born premature (<37 weeks gestation) or had low birth weight (<2,500g).
2. Educate clients prenatally and first year postpartum about co-sleeping and SIDS.
3. Discuss clients' intentions to co-sleep with an infant in the first year of life. Do not make assumptions about why clients co-sleep with an infant.
4. Encourage clients to place the infant to sleep on a separate sleep surface (e.g. crib or cradle) meeting Health Canada's safety regulations if the:
  - Infant is less than three months of age.
  - Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
  - Infant was born premature (<37 weeks gestation) or had low birth weight (<2,500g).

5. Problem solve with clients and community partners to secure access to resources that foster a safer sleep environment for infants.

### **Population Level**

6. Ensure public health messaging uses simple language to state that:
  - Sharing a bed to sleep with an infant in the first three months of life increases the risk of sudden infant death.
  - Sharing a couch or chair to sleep with an infant in the first year of life increases the risk of sudden infant death.
  - Co-sleeping with an infant between three and 12 months of age increases the risk of sudden infant death if the:
    - Parent(s) or caregiver(s) smokes, consumes alcohol or uses drugs.
    - Infant was born premature (<37 weeks gestation) or had low birth weight (<2,500g).
7. Revise the Family Health Division's policy ([FH4-065](#)) and nursing practice standards to reflect changes based on this research review's findings, including the definition of "co-sleeping" and information for clients. Include safer sleep environment components to promote safer infant sleep.
8. Discuss the findings of this research review with interested community partners' senior management.
9. Develop a knowledge translation plan to inform relevant Region of Peel – Public Health staff of the research review's findings, updated policy ([FH4-065](#)) and key

messages. When sharing the findings with staff, mention that the low quality of evidence and high risk of bias contributes to uncertainty of the risk estimates.

10. Review the updated Joint Statement on Safe Sleep and NICE Clinical Guideline 37 targeted for release in 2019 and 2020, respectively, to inform Family Health policy and key messages.

## Text References

(1) Bennett C, Connell M. Public health messaging related to bed sharing. Region of Peel 2012.

(2) Region of Peel. Infant Sleep Guidelines. 2014.

(3) Region of Peel. Charting by Exception Documentation Practice Standards: Postpartum Maternal Assessment, Tab G – Child Protection and Injury Prevention. 2017.

(4) Public Health Agency of Canada. Safe sleep for your baby. 2014; Available at: [https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/hp-ps/dca-dea/stages-etapes/childhood-enfance\\_0-2/sids/pdf/sleep-sommeil-eng.pdf](https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/hp-ps/dca-dea/stages-etapes/childhood-enfance_0-2/sids/pdf/sleep-sommeil-eng.pdf). Accessed Sept 25, 2017.

(5) Office of the Chief Coroner, Province of Ontario. Report of the Paediatric Death Review Committee and the Deaths Under Five Committee. 2009.

(6) Government of Canada. Joint Statement on Safe Sleep: Preventing Sudden Infant Deaths in Canada. 2018; Available at: <https://www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/stages-childhood/infancy-birth-two-years/safe-sleep/joint-statement-on-safe-sleep.html>. Accessed July 20, 2018.

(7) Castleman J. E-mail communication to Ava Nainifard (Region of Peel, Mississauga, Ontario). 2018 July 30.

(8) Region of Peel. Born in Peel. 2010.

(9) Office of the Chief Coroner, Province of Ontario. Report of the Paediatric Death Review Committee and the Deaths Under Five Committee. 2016. Available at: [https://www.mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/DU5C-PDRC\\_2016.pdf](https://www.mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/DU5C-PDRC_2016.pdf). Accessed Nov 23, 2017.

(10) CTV News. 'Undetermined': Why Canadian coroners have stopped using the term SIDS. 2017 April 5.

(11) Hauck FR, Thompson JM, Tanabe KO, Moon RY, Vennemann MM. Breastfeeding and reduced risk of sudden infant death syndrome: a meta-analysis. *Pediatrics* 2011;128(1):103-110.

(12) Lagon E, Moon RY, Colvin JD. Characteristics of infant deaths during sleep while under nonparental supervision. *J Pediatr* 2018;197:57-62.e36.

- (13) Public Health Agency of Canada. The Practice of Bed Sharing: A Systematic Literature and Policy Review. 2009; Available at: <https://www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/stages-childhood/infancy-birth-two-years/safe-sleep/practice-bed-sharing-a-systematic-literature-policy-review.html>. Accessed Sept 27, 2017.
- (14) National Institute for Health and Care Excellence. Addendum to Clinical Guideline 37, Postnatal Care: Routine postnatal care of women and their babies. 2014.
- (15) Perinatal Services British Columbia. Health Promotion Guideline 1: Safe Sleep Environment Guideline for Infants 0 to 12 Months of Age. 2011.
- (16) Registered Nurses' Association of Ontario. Working with Families to Promote Safe Sleep for Infants 0-12 Months of Age. 2014.
- (17) American Academy of Pediatrics. SIDS and Other Sleep-Related Infant Deaths: Evidence Base for 2016 Updated Recommendations for a Safe Infant Sleeping Environment. 2016.
- (18) Brouwers M, Kho ME, Browman Gp, Burgers JS, Cluzeau F, Feder G et al. AGREE II: Advancing guideline development reporting and evaluation in health care. *Can Med Assoc J* 2010;182(18):E839-842.
- (19) Blair PS, Fleming PJ, Smith IJ, Ward Platt M, Young J, Nadin P, Berry PJ, Golding J, the CESDI SUDI research group. Babies sleeping with parents: casecontrol study of factors influencing the risk of the sudden infant death syndrome. *BMJ* 1999;1457-1462.
- (20) Blair PS, Fleming PJ, Smith IJ, Ward Platt M, Young J, Nadin P, et al. Sudden infant death syndrome and sleeping position in pre-term and low birth weight infants: an opportunity for targeted intervention. *Arch Dis Child* 2006;91:101-106.
- (21) Blair PS, Sidebotham P, Edmonds M, Heckstall-Smith EMA, Fleming P. Hazardous cosleeping environments and risk factors amenable to change: case-control study of SIDS in south west England. *BMJ* 2009;339:b3666.
- (22) Carpenter RG, Irgens LM, Blair PS, England PD, Fleming P, Huber J, Jorch G, Schreuder P. Sudden unexplained infant death in 20 regions in Europe: case control study. *The Lancet* 2004;363:185-191.
- (23) Hauck FR, Herman SM, Donovan M, Iyasu S, Merrick Moore C, Donoghue E, Kirschner RH, Willinger M. Sleep Environment and the risk of sudden infant death syndrome in an urban population: the Chicago infant mortality study. *Pediatrics* 2003;111:1207-1214.

(24) McGarvey C, McDonnell M, Hamilton K, O'Regan M, Matthews T. An 8 year study of risk factors for SIDS: bed-sharing versus non-bed-sharing. *Arch Dis Child* 2006;91:318-323.

(25) Mitchell EA, Tuohy PG, Brunt JM, Thompson JMD, Clements MS, Stewart AW, et al. Risk factors for sudden infant death syndrome following the prevention campaign in New Zealand: a prospective study. *Pediatrics* 1997;100(5):835-840.

(26) Ruys J, de Jonge GA, Brand R, Engelberts AC, Semmekrot BA. Bed-sharing in the first four months of life: a risk factor for sudden infant death. *Acta Paediatr* 2007;96:1399-1403.

(27) Tappin D, Ecob R, Brooke H. Bedsharing, roomsharing, and sudden infant death syndrome in Scotland: a case-control study. *J Pediatr* 2005;147:32-37.

(28) Vennemann MM, Bajanowski T, Brinkmann B, Jorch G, Sauerland C, Mitchell EA, the GeSID Study Group. Sleep environment risk factors for sudden infant death syndrome: the German sudden infant death syndrome study. *Pediatrics* 2009;123:1162-1170.

(29) Brooke H, Gibson A, Tappin D, Brown H. Case-control study of sudden infant death syndrome in Scotland, 1992-5. *BMJ* 1997;314:1516.

(30) Klonoff-Cohen H ES. Bed sharing and the sudden infant death syndrome. *BMJ* 1995;311:1269.

(31) Carpenter R, McGarvey C, Mitchell EA, Tappin DM, Vennemann MM, Smuk M, et al. Bed sharing when parents do not smoke: is there a risk of SIDS? An individual level analysis of five major case-control studies. *BMJ Open* 2013;3:e002299.

(32) Blair PS, Sidebotham P, Pease A, Fleming PJ. Bed-sharing in the absence of hazardous circumstances: is there a risk of sudden infant syndrome? An analysis of two case-control studies conducted in the UK. *PLoS One* 2014;9(9):e107799.

(33) Buffet C, Ciliska D, Thomas H. Can I Use This Evidence in my Program Decision? Assessing Applicability and Transferability of Evidence. Nov 2007;2017 Nov 27.

(34) Region of Peel. Setting the Pace: A revision to Peel Public Health's 10-Year Strategic Plan: 2009-19.

(35) Region of Peel. Low-Birth-Weight Rate. 2014; Available at: <http://www.peelregion.ca/health/statusdata/pdf/birth-weight-c.pdf>. Accessed Dec 11, 2017.



(36) Region of Peel. Preterm Birth Rate. 2014; Available at: <http://www.peelregion.ca/health/statusdata/pdf/gestational-age-b.pdf>. Accessed Dec 11, 2017.

(37) Region of Peel. Nurturing the Next Generation Foundational Report. June 2017.

(38) Parenting in Peel. Does your #baby #sleep in bed with you? If you do practice #bedsharing with your baby, follow the tips below to make sure they are #safe! 2018 Feb 27.

(39) Healthy Families Hamilton. Bed sharing (sharing the same sleep surface with a baby) can never be made safe and is not recommended. In Ontario, most deaths in the sleeping environment are due to bed sharing. Why do you think bed sharing is unsafe? 2018 Mar 7.

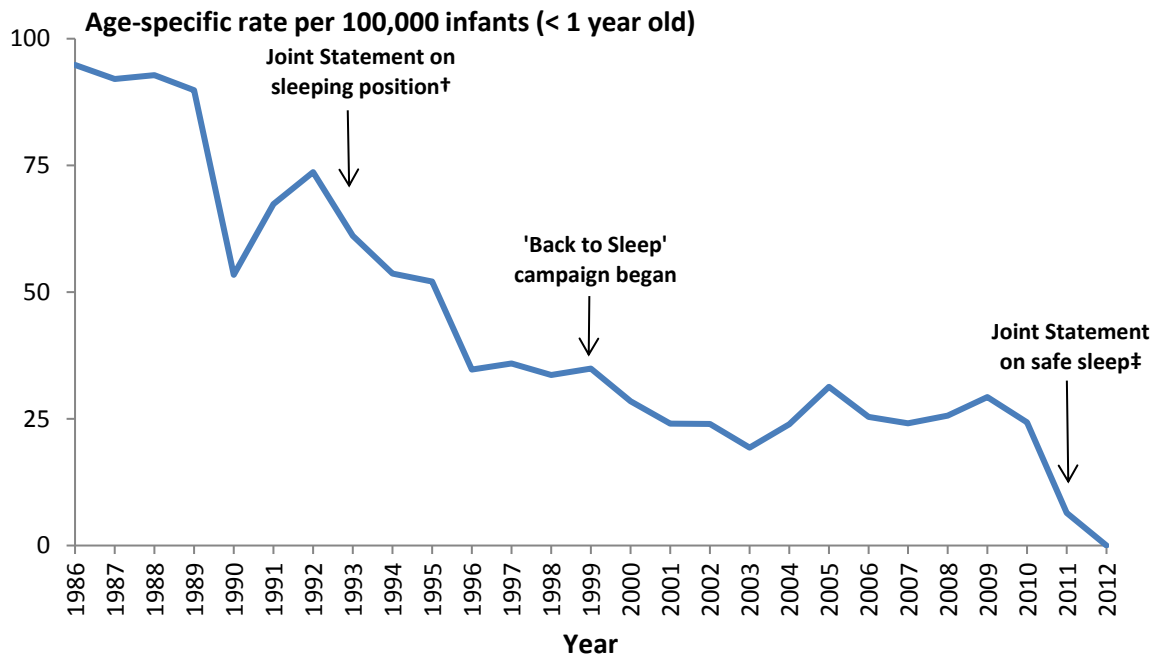
## **Data Reference**

A Ontario Mortality Database, 2008-2012, Ontario Registrar General. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care. Population Estimates, 2008-2012, Statistics Canada. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

# Appendix A: Infant Deaths in Peel and Ontario

## Appendix A.1

### Sudden Infant Death Syndrome Death Rate, Ontario, 1986-2012



†Statement by The Canadian Foundation for the Study of Infant Deaths, the Canadian Institute of Child Health, The Canadian Paediatric Society and Health Canada, ‡ as well as North American experts and the Public Health Agency of Canada

Note: Includes ICD-9 789.0 and ICD-10 R95

Source: Ontario Mortality Database, 1986-2012, Ontario Registrar General. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

Population Estimates, 1986-2012, Statistics Canada. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

## Appendix A.2

### Sudden Infant Death Syndrome Death Rate Among Infants (< 1 year old) by Year, Peel and Ontario, 1986-2012

Year	Peel		Ontario	
	Number	Age-specific rate per 100,000	Number	Age-specific rate per 100,000
1986	3	30.0	125	94.8
1987	14	137.1	124	92.1
1988	5	46.7	126	92.8
1989	8	71.2	127	89.9
1990	4	33.0	80	53.4
1991	8	63.2	103	67.4
1992	7	53.8	112	73.7
1993	3	22.9	91	61.1
1994	1	7.4	79	53.7
1995	4	29.5	77	52.1
1996	3	21.3	51	34.7
1997	1	7.6	49	36.0
1998	3	22.8	45	33.7
1999	3	23.0	46	34.9
2000	4	29.8	38	28.5
2001	0	0.0	32	24.1
2002	4	29.4	31	24.0
2003	0	0.0	25	19.3
2004	2	13.3	32	24.0
2005	4	25.9	42	31.3
2006	1	6.4	35	25.4
2007	0	0.0	33	24.1
2008	1	6.1	36	25.6
2009	2	12.4	41	29.3
2010	4	25.7	34	24.3
2011	0	0.0	9	6.4
2012	0	0.0	0	0.0

Note: Includes ICD-9 789.0 and ICD-10 R95

Source: Ontario Mortality Database, 1986-2012, Ontario Registrar General. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

Population Estimates, 1986-2012, Statistics Canada. IntelliHEALTH Ontario, Ministry of Health and Long-Term Care.

## Appendix B: Search Strategy

Databases: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to September 13, 2017>, Global Health <1973 to 2017 Week 36>, Ovid Healthstar <1966 to July 2017>, Ovid MEDLINE(R) <1946 to September Week 1 2017>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <September 15, 2017>, PsycINFO <2002 to September Week 2 2017>

Search Strategy:

- 
- 1 bedshar\$.tw. (172)
  - 2 bed shar\$.tw. (702)
  - 3 bed-shar\$.tw. (702)
  - 4 cosleep\$.tw. (173)
  - 5 (safe adj1 sleep\*).tw. (384)
  - 6 (safe adj1 infant\$ adj1 sleep\$).tw. (137)
  - 7 co-sleep\$.tw. (428)
  - 8 1 or 2 or 3 or 4 or 5 or 6 or 7 (1652)
  - 9 review\*.ti,pt. (3899852)
  - 10 meta analys\*.ti,pt. (163646)
  - 11 synthes\*.ti,pt. (330218)
  - 12 guideline\*.ti,pt. (124823)
  - 13 9 or 10 or 11 or 12 (4400759)
  - 14 8 and 13 (193)
  - 15 infant\*.tw. (664715)
  - 16 14 and 15 (148)
  - 17 remove duplicates from 16 (98)
  - 18 limit 17 to yr="2011 -Current" (51)

\*\*\*\*\*

Database: CINAHL  
Implemented September 18, 2017

	Query	Limiters/Expanders	Last Run Via	Results	Action
S26	S24 AND S16	Limiters - Published Date: 20110101-20171231 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	51	Edit S26
S25	S24 AND S16	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	101	Edit S25
S24	S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced	331,535	Edit S24

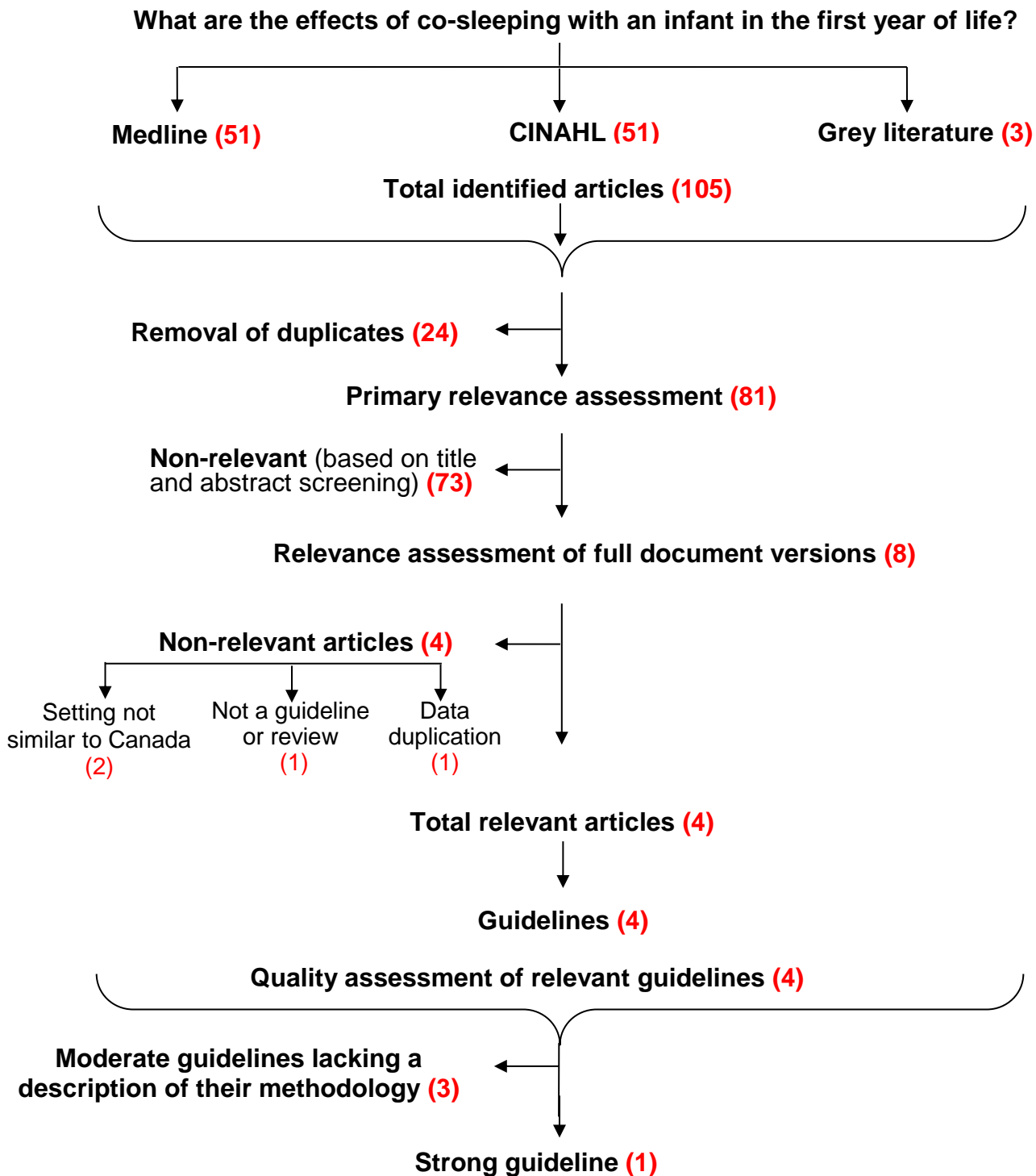
			Search Database - CINAHL Plus with Full Text		
S23	SU guideline*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	63,670	Edit S23
S22	TI guideline*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	32,477	Edit S22
S21	TI synthes*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	4,160	Edit S21
S20	SU review*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	119,642	Edit S20
S19	SU meta analys*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	28,650	Edit S19
S18	TI meta analys*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	25,966	Edit S18
S17	TI review*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	150,333	Edit S17
S16	S15 AND S14	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases	841	Edit S16

			Search Screen - Advanced Search Database - CINAHL Plus with Full Text		
S15	TX infant*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	289,713	Edit S15
S14	S8 AND S13	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	1,037	Edit S14
S13	S9 OR S10 OR S11 OR S12	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	4,216,888	Edit S13
S12	TX guideline*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	289,078	Edit S12
S11	TX syntheses*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	67,115	Edit S11
S10	TX review*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	4,179,715	Edit S10
S9	TX meta analysis*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	95,290	Edit S9
S8	S1 OR S2 OR S3 OR	Search modes -	Interface - EBSCOhost	1,210	Edit S8

	S4 OR S5 OR S6 OR S7	Boolean/Phrase	Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text		
S7	TX safe N1 infant N1 sleep	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	117	Edit S7
S6	TX safe N1 sleep	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	416	Edit S6
S5	TX co-sleep*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	306	Edit S5
S4	TX cosleep*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	106	Edit S4
S3	TX bed-shar*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	650	Edit S3
S2	TX "bed shar**"	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	642	Edit S2
S1	TX bedshar*	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	129	



## Appendix C: Literature Search Flowchart



## Appendix D: Data Extraction Table

NICE. (2014). Addendum to Clinical Guideline 37, Postnatal Care: Routine postnatal care of women and their babies.

<b>General Information and Quality Rating</b>	
Country	United Kingdom
Quality Rating using AGREE II Tool	<ul style="list-style-type: none"> <li>6/7 (strong quality) by two reviewers MC in 2014 and EW in 2015.</li> <li>Based on methodology reported in original guideline (2006) and used for the addendum (2014).</li> </ul>
<b>Details of Guideline</b>	
Objective	To determine the risk of co-sleeping in relation to sudden infant death syndrome (SIDS) (2014)
Target audience	Health care providers and women with infants aged zero to one year of age
Evidence used to develop the guideline	<ul style="list-style-type: none"> <li>12 single case-control studies and two patient data (i.e. case-control) meta-analysis studies. (2014)</li> <li>Only multivariate analysis outcomes were used to formulate evidence statements informing the recommendations. Univariate analysis that did not control for confounders were not used as evidence to inform recommendations.</li> <li>Included studies were extracted from the guideline's Appendix G: Evidence Tables. Relevant information for the evidence review was also extracted from the individual studies. See Appendix E for details of included studies.</li> </ul>
Search period	<ul style="list-style-type: none"> <li>Database inception to February 20, 2014.</li> <li>Full search strategy listed in Appendix D of 2014 update.</li> </ul>
Number of databases searched	10 databases including the Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, Health Technology Assessment, National Health Service Economic Evaluation Database, Medline, Medline In-Process, Embase, PsycINFO, CINAHL, PubMed (2014)
Inclusion/exclusion criteria	<ul style="list-style-type: none"> <li>Inclusion: infants up to one year of age, full text publications in English language, outcomes including SIDS, interventions related to bed sharing or co-sleeping (however defined), systematic reviews and observational studies (2014).</li> <li>Exclusion: narrative reviews, case series and case studies (2014).</li> </ul>
Methodology	<ul style="list-style-type: none"> <li>A modified version of GRADE to assess evidence quality was used since case-control studies are the most appropriate study design for this topic.</li> <li>Recommendations formulated based on data extraction and edits made until guideline development group reached consensus.</li> <li>Draft of updated recommendations shared with stakeholders who were invited to make comments. Comments were considered and final draft published.</li> <li>Economic analysis not conducted.</li> </ul>
<b>Details of Exposures Included in Guideline</b>	
Target groups	Women with babies up to one year of age receiving care (2006)
Description of relevant exposures	Bed sharing or co-sleeping as they are used interchangeably and co-sleeping may not necessarily be exclusive bed sharing (2014).

	Definitions provided include: <ul style="list-style-type: none"> <li>• Co-sleeping: sharing of a bed or other surface such as a sofa or chair to sleep</li> <li>• Bed sharing: the sharing of a bed only to sleep</li> </ul>
Intervention settings	Home
Outcomes	SIDS as defined in the included studies (2014)
<b>Relevant recommendations</b>	
<p>It is possible that many factors contribute but some factors are known to make SIDS more likely (e.g. placing a baby on their front or side to sleep). Some of the reviewed evidence showed that there is a statistical relationship between SIDS and co-sleeping. This means that where co-sleeping occurs, there may be an increase in the number of cases of SIDS. However, the evidence does not allow us to say that co-sleeping causes SIDS. Therefore the term “association” has been used in the recommendations to describe the relationship between co-sleeping and SIDS. The recommendations on co-sleeping and SIDS cover the first year of an infant's life.</p> <ul style="list-style-type: none"> <li>• Recognize that co-sleeping can be intentional or unintentional. Discuss this with parents and carers and inform them that there is an association between co-sleeping (parents or carers sleeping on a bed or sofa or chair with an infant) and SIDS.</li> <li>• Inform parents and carers that the association between co-sleeping (sleeping on a bed or sofa or chair with an infant) and SIDS is likely to be greater when they, or their partner, smoke.</li> <li>• Inform parents and carers that the association between co-sleeping (sleeping on a bed or sofa or chair with an infant) and SIDS may be greater with:             <ul style="list-style-type: none"> <li>○ Parental or carer recent alcohol consumption, or</li> <li>○ Parental or carer drug use, or</li> <li>○ Low birth weight or premature infants.</li> </ul> </li> </ul>	
<b>Guideline Committee discussion points to develop recommendations</b>	
<u>Relative value of different outcomes</u> <ul style="list-style-type: none"> <li>• Incidence of SIDS is higher in the first few months of life.</li> <li>• Other factors may be involved in SIDS cases, which may interact with co-sleeping and may have an effect on any association between co-sleeping and SIDS.</li> <li>• Reasons why co-sleeping occurs may include promoting and maintaining breastfeeding, cultural and traditional sleep practices, and/or socioeconomic factors. These factors may influence where infants sleep. Co-sleeping may occur out of necessity and it may be pre-planned or unplanned.</li> <li>• Important not to make assumptions about the reasons why parents and carers may share a sleep surface with their infant. It is important to acknowledge and discuss these reasons and it should be noted within the recommendations.</li> </ul>	
<u>Trade-off between benefits and harms</u> <ul style="list-style-type: none"> <li>• Due to methodological issues with the evidence, SIDS and co-sleeping cannot be discussed in terms of risk since a cause and effect relationship cannot be inferred. Therefore, it can only be discussed in terms of an association. This makes it difficult to be definitive about recommending behavioural changes.</li> <li>• <b>Informed decision making:</b> <ul style="list-style-type: none"> <li>○ Core of the recommendations is to ensure parents and carers are as fully informed as possible for any decision-making.</li> <li>○ Parents and carers asked to consider or alter sleeping practices in response to an association</li> </ul> </li> </ul>	

with SIDS need to be informed as soon as possible, preferably during the prenatal period.

- Parents and carers may need information relating to co-sleeping and SIDS at several time points, such as before birth, after birth and any other occasion where they have health care professional contact. Important that health care professionals discuss with parents and carers and advise on where an infant should sleep.
- With such a serious potential outcome, it is important for parents and carers to be informed that there is an association between co-sleeping and SIDS.
- **Sofa and chair:** Results from the included evidence on sharing a sofa or chair to sleep were based on small samples.
- **Smoking:** There was evidence of an independent association among smoking, co-sleeping and SIDS.
- **Alcohol and drug use:**
  - It is not possible to ascertain an association with alcohol and/or drug use (legal or illegal) due to the small numbers of cases and controls reported in the included studies. Alcohol and drug use were included in the original recommendations in the Postnatal Care guideline (2006) and there was very limited evidence in this area included in the evidence review. It was considered inappropriate to exclude these factors from the updated recommendations.
  - Recommendation on the use of medication of drugs making one sleep more heavily was considered. No evidence had been identified in relation to co-sleeping and legal drug use.
- **Preterm infants and low birth weight:** There is some evidence that the association between co-sleeping and SIDS may be more evident for those of low birth weight (<2,500g), or those born before 37 weeks, though very limited evidence is available in this area. The Committee considered it to be important that parents and carers of these infants were aware of this possible association.
- The term “very tired” was discussed in the original recommendation (2006). It was agreed that this is a very subjective description and does not help with decisions that parents or carers may make about co-sleeping. It was agreed not to include this in the updated recommendations (2014).
- Terminology and clarity of recommendations are very important. Potential confusion could arise by the use of the term “bed sharing,” that this could be taken literally, and that parents and carers may decide to avoid sharing a bed with their infant thinking that sharing other surfaces such as a sofa or chair may be safer. Clear communication is important where there may be potential communication issues (e.g. where English is not the primary spoken language). Recommendations should not separate co-sleeping into the constituent possibilities, but define it in the recommendations to include sleeping on a bed, sofa or chair.

#### Trade-off between net health benefits and resource use

- Quality of the evidence presented via the modified GRADE tables and evidence review were discussed. All included studies were low quality and had a high risk of bias. It is important to discuss the evidence in detail. The seriousness of SIDS merits the use of lower quality evidence.
- Overall challenges of SIDS research were discussed. It was agreed that the case-control studies represented an appropriate study design to be included in the evidence review.

#### **Comments and limitations noted by Committee developing guideline**

- Case-control studies matched some infants; however, it cannot be assumed that all factors within the studies influencing SIDS are related to the infant only. Most included studies did not match for potential parental factors (e.g. socioeconomic factors or parental health factors).
- Comparing between studies was difficult as bed sharing and co-sleeping definitions varied in the included studies.
- Logistic regression was used in the analysis by the included studies, however many studies did not report on the details of the analysis used. Multivariate analysis often adjusted for other possible confounding factors and it was not possible to directly compare the study outcomes.

## Reviewer comments

- External stakeholders commented that guideline recommendations did not address increased odds of SIDS in infants under three months of age during the consultation process (2014). External stakeholders suggested that the recommendation include the association of co-sleeping and SIDS to be “strongest in the first three months” of life. The guideline development group responded that “there was insufficient evidence identified that would allow for this time period to be further subdivided into different age groups.” All comments and responses are available in the Guideline Consultation Table, July 3-31, 2014 (accessed November 22, 2017).
- Surveillance report 2017 – Postnatal care up to 8 weeks after birth (2006) NICE guideline CG37 notes the following about messaging in a diverse population:
  - One observational study in the United Kingdom examined whether a more complex message about bed sharing and the risk of SIDS and accidental death would be understood and remembered by mothers. Leaflet-based tool was designed and addressed common infant sleep locations with information on their risks and benefits. Also included information regarding bed sharing benefits and a checklist that parents could use to assess their own risk.
    - Finding: When leaflet is delivered by appropriately trained staff, it is effective for enabling discussions with pregnant women to increase their knowledge on the risks and benefits of infant sleep locations.
  - One qualitative study examined how British and Pakistani mothers in Bradford, United Kingdom, recall, understand and interpret SIDS-reduction guidance and to explore whether and how they implement the guidance in caring for their infants. Narrative reviews conducted with 46 mothers with eight to 12 week old infants.
    - Findings:
      - Pakistani mothers tended to dismiss the guidance as being irrelevant to their cultural practices.
      - British mothers adopted aspects of the guidance to suit their preferred parenting decisions and personal circumstances.
    - Authors conclude that current SIDS reduction information in the United Kingdom does not meet the needs of immigrant families and is easily misinterpreted or misunderstood by mothers from all sections of the community. One topic expert highlighted that ethnic minority groups do not receive SIDS reduction guidance reflecting their cultural practices or beliefs.
- Original guideline Postnatal Care Up to 8 Weeks After Birth, Clinical Guideline 37 (2006) is currently being updated. Expected completion date is January 2020. The following research questions regarding co-sleeping will be examined:
  - 3.2: What are the benefits and harms of co-sleeping?
  - 3.3: What are the risk factors in relation to co-sleeping for SIDS?

Government of Canada. (2011). Joint Statement on Safe Sleep: Preventing Sudden Infant Deaths in Canada

General Information and Quality Rating	
Country	Canada
Objective	To provide health practitioners with current evidence-based information so they may offer parents and caregivers information and support to prevent deaths due to SIDS and unsafe sleep practices in Canada.
Relevant Findings	
<p>SIDS definition: the sudden death of an infant less than one year of age, which remains unexplained after a thorough case investigation, including the performance of a complete autopsy, an examination of the death scene, and a review of the clinical history.</p> <p><b>Principles of safe sleep and modifiable risk factors</b></p> <ol style="list-style-type: none"> <li> <p><i>Infants placed on their backs to sleep, for every sleep, have a reduced risk of SIDS.</i></p> <p>“Prone and lateral sleeping positions are linked to increased rates of SIDS, even for infants who regurgitate. Infants who normally sleep on their backs and are then placed to sleep on their stomachs are at a particularly high risk. This reinforces the importance to consistently place infants on their backs to sleep at home, in child care settings, and when travelling. Sleep positioners or any other infant sleep positioning devices should not be used as they pose a risk of suffocation. Once infants are able to roll from their backs to their stomachs or sides, it is not necessary to reposition them onto their backs.”</p> </li> <li> <p><i>Preventing exposure to tobacco smoke, before and after birth, reduces the risk of SIDS.</i></p> <p>“Maternal smoking during pregnancy is an important risk factor for SIDS. The more a woman smokes during pregnancy, the higher the risk of SIDS. Women who reduce the amount of cigarettes smoked during pregnancy can reduce the risk of SIDS for their infants, and women who stop smoking can further reduce the risk.</p> <p>Infants who are exposed to second-hand smoke after birth are also at a greater risk of SIDS, and the risk increases with the level of exposure.”</p> </li> <li> <p><i>The safest place for an infant to sleep is in a crib, cradle, or bassinet that meets current Canadian regulations.</i></p> <p>Infants sleeping on surfaces not designed for their sleep (e.g. adult beds, sofas and chairs) increase the likelihood of becoming trapped and suffocating, especially when the surface is shared with an adult or another child. A crib, cradle or bassinet needs only a firm mattress and a fitted sheet. Soft bedding (e.g. pillows, duvets, quilts, comforters and bumper pads) increase the risk of suffocation.</p> <p>Infant overheating is also a risk factor for SIDS. Infants should be put to sleep in one-piece clothing that is “comfortable at room temperature and does not [cause overheating].” Blankets are not needed as it can cover an infant’s head and cause them to overheat. If a blanket is needed, a thin, lightweight and breathable blanket is safest. If an infant sleeps while in the sitting position, their head can fall forward constricting their airway. The infant should be moved to a crib, cradle or bassinet when “the destination is reached.”</p> </li> <li> <p><i>Infants who share a room with a parent or caregiver have a lower risk of SIDS.</i></p> <p>“Room sharing refers to a sleeping arrangement where an infant’s crib, cradle, or bassinet is placed in the same room and near the parent or caregiver’s bed. Infants who share a room have a lower risk of SIDS and will benefit from room sharing for the first 6 months during the period of time the risk of SIDS is highest. Room sharing facilitates breastfeeding and frequent contact with infants at night.</p> <p><i>Bed sharing</i> describes a sleeping arrangement where an infant shares a sleeping surface such as an adult bed, sofa, or armchair with an adult or another child. Sharing a sleeping surface increases the risk</p> </li> </ol>	

of SIDS and the risk is particularly high for infants less than 4 months of age. Sharing a sleeping surface with an infant also increases the risk of entrapment, overheating, overlaying, and suffocation. The risk of SIDS and other unintentional deaths that occur during sleep increase further when an infant shares a sleeping surface with a parent or caregiver who smokes, has consumed alcohol, is under the influence of sedating drugs, or is overly tired.”

*Co-sleeping* can refer to a range of sleeping practices including both bed sharing and room sharing. “Definitions of this term are not consistent enough to make it universally acceptable.”

#### **Reviewer comments**

Reviewer discussed Joint Statement on Safe Sleep with a Senior Policy Analyst at the Public Health Agency of Canada (July 30, 2018). Discussion revealed that the Joint Statement was developing using round table discussions with experts and a systematic literature review (Trifunov, 2009). The literature used to develop the Joint Statement on Safe Sleep was not critically appraised.

## Appendix E: Studies Included in the National Institute for Health and Care Excellence Guideline

### Studies included as evidence in the National Institute for Health and Care Excellence (NICE) guideline (13)

Note: GRADE profile and guideline Committee recognize that all studies were low quality and had a high risk of bias.

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																										
<p>Carpenter, 2013</p> <p>Analysis of five case-control studies</p>	<p>Cases and controls co-sleeping on a sofa or anywhere else were included, but were not included in bed-sharing subgroup. They were included as part of "room sharing" subgroup. All infants were less than one year of age.</p> <p>Europe, including but not limited to Scotland, Ireland and Germany; New Zealand</p>	<p>Bed-sharing: when one or both parents slept with baby in bed and they woke to find the baby dead in bed with them.</p>	<table border="1"> <thead> <tr> <th data-bbox="829 594 1157 659">Factor</th> <th data-bbox="1157 594 1455 659">Bed sharing at 10 weeks AOR (95% CI)</th> <th data-bbox="1455 594 1753 659">Bed sharing at 20 weeks AOR (95% CI)</th> </tr> </thead> <tbody> <tr> <td colspan="3" data-bbox="829 659 1753 691"><b>Position last left</b></td> </tr> <tr> <td data-bbox="829 691 1157 724">Back</td> <td data-bbox="1157 691 1455 724"></td> <td data-bbox="1455 691 1753 724">1.2 (0.6-2.8)</td> </tr> <tr> <td data-bbox="829 724 1157 756">Side</td> <td data-bbox="1157 724 1455 756">3.6 (1.8-7.2)</td> <td data-bbox="1455 724 1753 756">0.8 (0.3-2.0)</td> </tr> <tr> <td data-bbox="829 756 1157 789">Front</td> <td data-bbox="1157 756 1455 789"></td> <td data-bbox="1455 756 1753 789">5.3 (1.8-16.0)</td> </tr> <tr> <td colspan="3" data-bbox="829 789 1753 821"><b>Parental smoking</b></td> </tr> <tr> <td data-bbox="829 821 1157 854">None</td> <td data-bbox="1157 821 1455 854">3.6 (1.8-7.2)</td> <td data-bbox="1455 821 1753 854">1.2 (0.6-2.8)</td> </tr> <tr> <td data-bbox="829 854 1157 886">Partner</td> <td data-bbox="1157 854 1455 886">7.6 (3.8-15.1)</td> <td data-bbox="1455 854 1753 886">2.6 (1.2-6.0)</td> </tr> <tr> <td data-bbox="829 886 1157 919">Mother</td> <td data-bbox="1157 886 1455 919">20.4 (8.9-47.7)</td> <td data-bbox="1455 886 1753 919">7.1 (2.8-18.0)</td> </tr> <tr> <td data-bbox="829 919 1157 951">Both</td> <td data-bbox="1157 919 1455 951">28.0 (15.0-52.3)</td> <td data-bbox="1455 919 1753 951">9.7 (4.7-20.2)</td> </tr> <tr> <td colspan="3" data-bbox="829 951 1753 984"><b>Mother's alcohol*</b></td> </tr> <tr> <td data-bbox="829 984 1157 1016">2+ vs &lt;2 units** or none</td> <td data-bbox="1157 984 1455 1016">38.6 (12.6-117.8)</td> <td data-bbox="1455 984 1753 1016">13.5 (4.6-39.4)</td> </tr> <tr> <td colspan="3" data-bbox="829 1016 1753 1049"><b>Mother's illegal drug user</b></td> </tr> <tr> <td data-bbox="829 1049 1157 1081">Yes vs no</td> <td data-bbox="1157 1049 1455 1081">Inestimably large</td> <td data-bbox="1455 1049 1753 1081">Inestimably large</td> </tr> </tbody> </table> <p>* Analysis of two data sets only ** Units are undefined in study</p>	Factor	Bed sharing at 10 weeks AOR (95% CI)	Bed sharing at 20 weeks AOR (95% CI)	<b>Position last left</b>			Back		1.2 (0.6-2.8)	Side	3.6 (1.8-7.2)	0.8 (0.3-2.0)	Front		5.3 (1.8-16.0)	<b>Parental smoking</b>			None	3.6 (1.8-7.2)	1.2 (0.6-2.8)	Partner	7.6 (3.8-15.1)	2.6 (1.2-6.0)	Mother	20.4 (8.9-47.7)	7.1 (2.8-18.0)	Both	28.0 (15.0-52.3)	9.7 (4.7-20.2)	<b>Mother's alcohol*</b>			2+ vs <2 units** or none	38.6 (12.6-117.8)	13.5 (4.6-39.4)	<b>Mother's illegal drug user</b>			Yes vs no	Inestimably large	Inestimably large
Factor	Bed sharing at 10 weeks AOR (95% CI)	Bed sharing at 20 weeks AOR (95% CI)																																											
<b>Position last left</b>																																													
Back		1.2 (0.6-2.8)																																											
Side	3.6 (1.8-7.2)	0.8 (0.3-2.0)																																											
Front		5.3 (1.8-16.0)																																											
<b>Parental smoking</b>																																													
None	3.6 (1.8-7.2)	1.2 (0.6-2.8)																																											
Partner	7.6 (3.8-15.1)	2.6 (1.2-6.0)																																											
Mother	20.4 (8.9-47.7)	7.1 (2.8-18.0)																																											
Both	28.0 (15.0-52.3)	9.7 (4.7-20.2)																																											
<b>Mother's alcohol*</b>																																													
2+ vs <2 units** or none	38.6 (12.6-117.8)	13.5 (4.6-39.4)																																											
<b>Mother's illegal drug user</b>																																													
Yes vs no	Inestimably large	Inestimably large																																											
<p>Blair, 2014</p> <p>Analysis of two case-control studies</p>	<p>Cases and controls: one study individually matched infants for age and time of day the death occurred; second</p>	<p>Co-sleeping (includes bed and sofa sharing): infants sharing the same surface with at least one adult for sleep.</p>	<p>1. Co-sleeping by different co-sleeping environments:</p> <table border="1"> <thead> <tr> <th data-bbox="829 1268 1220 1333">Environment</th> <th data-bbox="1220 1268 1707 1333">Bed sharing with infant less than one year of age AOR* (95% CI)</th> <th data-bbox="1707 1268 1837 1333">P value</th> </tr> </thead> <tbody> <tr> <td data-bbox="829 1333 1220 1365">Not co-sleeping</td> <td data-bbox="1220 1333 1707 1365">1.00 (ref)</td> <td data-bbox="1707 1333 1837 1365"></td> </tr> <tr> <td data-bbox="829 1365 1220 1398">Sofa or chair</td> <td data-bbox="1220 1365 1707 1398">18.34 (7.10-47.35)</td> <td data-bbox="1707 1365 1837 1398">&lt;0.0001</td> </tr> <tr> <td data-bbox="829 1398 1220 1430">Bed sharing (&gt;2 units alcohol)</td> <td data-bbox="1220 1398 1707 1430">18.29 (7.68-43.54)</td> <td data-bbox="1707 1398 1837 1430">&lt;0.0001</td> </tr> </tbody> </table>	Environment	Bed sharing with infant less than one year of age AOR* (95% CI)	P value	Not co-sleeping	1.00 (ref)		Sofa or chair	18.34 (7.10-47.35)	<0.0001	Bed sharing (>2 units alcohol)	18.29 (7.68-43.54)	<0.0001																														
Environment	Bed sharing with infant less than one year of age AOR* (95% CI)	P value																																											
Not co-sleeping	1.00 (ref)																																												
Sofa or chair	18.34 (7.10-47.35)	<0.0001																																											
Bed sharing (>2 units alcohol)	18.29 (7.68-43.54)	<0.0001																																											



Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																																																																	
	<p>study's variables were weighted instead of individually matched. All infants were less than one year of age.</p> <p>England</p>	<p>Sofa sharing: infants sleeping on a chair or sofa with an adult.</p> <p>Bed sharing: infants sharing the parental bed with at least one adult.</p>	<table border="1" data-bbox="827 326 1839 386"> <tr> <td>Bed sharing (smoking)</td> <td>4.04 (2.41-6.75)</td> <td>&lt;0.0001</td> </tr> <tr> <td>Bed sharing (no hazards)</td> <td>1.08 (0.58-2.01)</td> <td>0.82</td> </tr> </table> <p>* Adjusted for infant age, day or night sleep, birthweight &lt;2,500g, male gender, currently breastfeeding, larger families (≥three children), mothers ≥21 years, poor maternal education, factors at last sleep (infant unwell, placed prone, swaddled, use of duvet, dummy use, found with head covered)</p> <p>2. Co-sleeping by different co-sleeping environments in younger and older infants:</p> <table border="1" data-bbox="814 542 2028 1019"> <thead> <tr> <th></th> <th>Cases N (%)</th> <th>Controls N (%)</th> <th>OR* (95% CI)</th> <th>P value</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Younger Infant (&lt;98 days)</b></td> </tr> <tr> <td>Not co-sleeping</td> <td>110 (49.8)</td> <td>556 (84.2)</td> <td>1.00 (ref)</td> <td></td> </tr> <tr> <td>Co-sleeping</td> <td>111 (50.2)</td> <td>106 (15.8)</td> <td>5.24 (3.71-7.39)</td> <td></td> </tr> <tr> <td>    Sofa or chair</td> <td>22 (10.0)</td> <td>5 (0.7)</td> <td>21.44 (7.93-58.04)</td> <td>&lt;0.0001</td> </tr> <tr> <td>    Bed sharing (&gt;2 units alcohol)</td> <td>19 (8.6)</td> <td>5 (0.7)</td> <td>19.35 (7.05-53.11)</td> <td>&lt;0.0001</td> </tr> <tr> <td>    Bed sharing (smoking)</td> <td>47 (21.3)</td> <td>26 (3.9)</td> <td>8.93 (5.27-15.14)</td> <td>&lt;0.0001</td> </tr> <tr> <td>    Bed sharing (no hazards)</td> <td>23 (10.4)</td> <td>70 (10.4)</td> <td>1.62 (0.96-2.73)</td> <td>0.07</td> </tr> <tr> <td colspan="5"><b>Older Infant (&gt;98 days)</b></td> </tr> <tr> <td>Not co-sleeping</td> <td>145 (81.0)</td> <td>607 (85.0)</td> <td>1.00 (ref)</td> <td></td> </tr> <tr> <td>Co-sleeping</td> <td>34 (19.0)</td> <td>107 (15.0)</td> <td>1.40 (0.91-2.15)</td> <td>0.13</td> </tr> <tr> <td>    Sofa or chair</td> <td>11 (6.1)</td> <td>2 (0.3)</td> <td>23.86 (5.22-109.2)</td> <td>&lt;0.0001</td> </tr> <tr> <td>    Bed sharing (&gt;2 units alcohol)</td> <td>10 (5.6)</td> <td>7 (1.0)</td> <td>6.38 (2.38-17.12)</td> <td>0.0002</td> </tr> <tr> <td>    Bed sharing (smoking)</td> <td>12 (6.7)</td> <td>37 (5.2)</td> <td>1.42 (0.72-2.79)</td> <td>0.32</td> </tr> <tr> <td>    Bed sharing (no hazards)</td> <td>1 (0.6)</td> <td>61 (8.5)</td> <td>0.08 (0.01-0.52)</td> <td>0.009</td> </tr> </tbody> </table> <p>*Adjusted for infant age, day or night sleep</p>	Bed sharing (smoking)	4.04 (2.41-6.75)	<0.0001	Bed sharing (no hazards)	1.08 (0.58-2.01)	0.82		Cases N (%)	Controls N (%)	OR* (95% CI)	P value	<b>Younger Infant (&lt;98 days)</b>					Not co-sleeping	110 (49.8)	556 (84.2)	1.00 (ref)		Co-sleeping	111 (50.2)	106 (15.8)	5.24 (3.71-7.39)		Sofa or chair	22 (10.0)	5 (0.7)	21.44 (7.93-58.04)	<0.0001	Bed sharing (>2 units alcohol)	19 (8.6)	5 (0.7)	19.35 (7.05-53.11)	<0.0001	Bed sharing (smoking)	47 (21.3)	26 (3.9)	8.93 (5.27-15.14)	<0.0001	Bed sharing (no hazards)	23 (10.4)	70 (10.4)	1.62 (0.96-2.73)	0.07	<b>Older Infant (&gt;98 days)</b>					Not co-sleeping	145 (81.0)	607 (85.0)	1.00 (ref)		Co-sleeping	34 (19.0)	107 (15.0)	1.40 (0.91-2.15)	0.13	Sofa or chair	11 (6.1)	2 (0.3)	23.86 (5.22-109.2)	<0.0001	Bed sharing (>2 units alcohol)	10 (5.6)	7 (1.0)	6.38 (2.38-17.12)	0.0002	Bed sharing (smoking)	12 (6.7)	37 (5.2)	1.42 (0.72-2.79)	0.32	Bed sharing (no hazards)	1 (0.6)	61 (8.5)	0.08 (0.01-0.52)	0.009
Bed sharing (smoking)	4.04 (2.41-6.75)	<0.0001																																																																																		
Bed sharing (no hazards)	1.08 (0.58-2.01)	0.82																																																																																		
	Cases N (%)	Controls N (%)	OR* (95% CI)	P value																																																																																
<b>Younger Infant (&lt;98 days)</b>																																																																																				
Not co-sleeping	110 (49.8)	556 (84.2)	1.00 (ref)																																																																																	
Co-sleeping	111 (50.2)	106 (15.8)	5.24 (3.71-7.39)																																																																																	
Sofa or chair	22 (10.0)	5 (0.7)	21.44 (7.93-58.04)	<0.0001																																																																																
Bed sharing (>2 units alcohol)	19 (8.6)	5 (0.7)	19.35 (7.05-53.11)	<0.0001																																																																																
Bed sharing (smoking)	47 (21.3)	26 (3.9)	8.93 (5.27-15.14)	<0.0001																																																																																
Bed sharing (no hazards)	23 (10.4)	70 (10.4)	1.62 (0.96-2.73)	0.07																																																																																
<b>Older Infant (&gt;98 days)</b>																																																																																				
Not co-sleeping	145 (81.0)	607 (85.0)	1.00 (ref)																																																																																	
Co-sleeping	34 (19.0)	107 (15.0)	1.40 (0.91-2.15)	0.13																																																																																
Sofa or chair	11 (6.1)	2 (0.3)	23.86 (5.22-109.2)	<0.0001																																																																																
Bed sharing (>2 units alcohol)	10 (5.6)	7 (1.0)	6.38 (2.38-17.12)	0.0002																																																																																
Bed sharing (smoking)	12 (6.7)	37 (5.2)	1.42 (0.72-2.79)	0.32																																																																																
Bed sharing (no hazards)	1 (0.6)	61 (8.5)	0.08 (0.01-0.52)	0.009																																																																																
Blair, 1999 Case-control	<p>Four controls selected for each case. All infants were less than one year of age.</p> <p>Visited within one week of the case death to collect data. A period of sleep identified in the</p>	<p>Bed sharer: shared the same sleep place (bed or sofa) with at least one parent for any part of reference sleep.</p>	<p>Infants who died in parental bed (median age eight weeks; range four to 13 weeks) were younger than those found elsewhere (median age 15 weeks; range 10 to 23 weeks).</p> <p>Younger (&lt;median age, 14 weeks and two days) and older infants (&gt;14 weeks and two days):</p> <ul style="list-style-type: none"> <li>• Risk associated with bed sharing, younger infants: OR: 4.65 (95% CI: 2.70-7.99)</li> <li>• Risk associated with bed sharing, older infants: OR: 1.08 (95% CI: 0.55-2.11)</li> </ul> <p>Reviewer comment: Original study does not state that the above OR is controlled for additional confounders.</p>																																																																																	

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																																												
	control (reference sleep) infant's life in the 24 hours before the interview corresponding to the time of day the case died.  United Kingdom		<p>Relation between parental smoking and bed sharing:</p> <table border="1"> <thead> <tr> <th>≥1 parent smoking</th> <th>Bed sharing</th> <th>Cases (%)</th> <th>Controls (%)</th> <th>OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>No</td> <td>44 (13.7)</td> <td>582 (44.8)</td> <td>1.00</td> </tr> <tr> <td>No</td> <td>Yes</td> <td>7 (2.2)</td> <td>103 (7.9)</td> <td>10.49 (4.26-25.81)</td> </tr> <tr> <td>Yes</td> <td>No</td> <td>195 (60.7)</td> <td>528 (40.6)</td> <td>0.67 (0.22-2.00)</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>75 (23.4)</td> <td>86 (6.6)</td> <td>9.78 (4.02-23.83)</td> </tr> </tbody> </table> <p>* Adjusted for infant age</p> <p>Multivariate model controlling for adverse bed sharing conditions:</p> <table border="1"> <thead> <tr> <th>Sleeping environment</th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> <th>P value</th> </tr> </thead> <tbody> <tr> <td>Bed sharer (put back in own cot)</td> <td>24 (7.7)</td> <td>178 (13.7)</td> <td>0.60 (0.33-1.08)</td> <td>0.09</td> </tr> <tr> <td>Bed sharer (at the end of sleep)</td> <td>79 (25.3)</td> <td>186 (14.4)</td> <td>1.366 (0.83-2.20)</td> <td>0.23</td> </tr> <tr> <td>Sofa sharer</td> <td>20 (6.4)</td> <td>6 (0.5)</td> <td>25.86 (6.72-99.47)</td> <td>&lt;0.0001</td> </tr> <tr> <td>Parental tiredness</td> <td>86 (27.6)</td> <td>191 (14.7)</td> <td>2.42 (1.61-3.63)</td> <td>&lt;0.0001</td> </tr> <tr> <td>Maternal alcohol consumption</td> <td>37 (11.9)</td> <td>41 (3.2)</td> <td>3.40 (1.88-6.16)</td> <td>&lt;0.0001</td> </tr> </tbody> </table> <p>* Adjusted for infant age</p>	≥1 parent smoking	Bed sharing	Cases (%)	Controls (%)	OR* (95% CI)	No	No	44 (13.7)	582 (44.8)	1.00	No	Yes	7 (2.2)	103 (7.9)	10.49 (4.26-25.81)	Yes	No	195 (60.7)	528 (40.6)	0.67 (0.22-2.00)	Yes	Yes	75 (23.4)	86 (6.6)	9.78 (4.02-23.83)	Sleeping environment	Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value	Bed sharer (put back in own cot)	24 (7.7)	178 (13.7)	0.60 (0.33-1.08)	0.09	Bed sharer (at the end of sleep)	79 (25.3)	186 (14.4)	1.366 (0.83-2.20)	0.23	Sofa sharer	20 (6.4)	6 (0.5)	25.86 (6.72-99.47)	<0.0001	Parental tiredness	86 (27.6)	191 (14.7)	2.42 (1.61-3.63)	<0.0001	Maternal alcohol consumption	37 (11.9)	41 (3.2)	3.40 (1.88-6.16)	<0.0001					
≥1 parent smoking	Bed sharing	Cases (%)	Controls (%)	OR* (95% CI)																																																											
No	No	44 (13.7)	582 (44.8)	1.00																																																											
No	Yes	7 (2.2)	103 (7.9)	10.49 (4.26-25.81)																																																											
Yes	No	195 (60.7)	528 (40.6)	0.67 (0.22-2.00)																																																											
Yes	Yes	75 (23.4)	86 (6.6)	9.78 (4.02-23.83)																																																											
Sleeping environment	Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value																																																											
Bed sharer (put back in own cot)	24 (7.7)	178 (13.7)	0.60 (0.33-1.08)	0.09																																																											
Bed sharer (at the end of sleep)	79 (25.3)	186 (14.4)	1.366 (0.83-2.20)	0.23																																																											
Sofa sharer	20 (6.4)	6 (0.5)	25.86 (6.72-99.47)	<0.0001																																																											
Parental tiredness	86 (27.6)	191 (14.7)	2.42 (1.61-3.63)	<0.0001																																																											
Maternal alcohol consumption	37 (11.9)	41 (3.2)	3.40 (1.88-6.16)	<0.0001																																																											
Blair, 2006 Case-control	Four controls selected for each case. All infants were less than one year of age.  Age of the control infant was taken at the reference sleep in the 24 hours before the interview.  United Kingdom	Bed sharing: "infants found after the last sleep co-sleeping with at least one parent (on a mattress, sofa or chair) and was then defined as co-sleeping in the tables included in the study."  Reviewer comment: Original study defined "small at birth" as infants <37 weeks of gestation, had a birth weight of <2,500g or both.	<p>1. Preterm and low birth weight infants:</p> <table border="1"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> <th>P value</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Preterm</b></td> </tr> <tr> <td>No</td> <td>260 (80.5)</td> <td>1218 (94.6)</td> <td>1.00</td> <td></td> </tr> <tr> <td>Yes</td> <td>63 (19.5)</td> <td>70 (5.4)</td> <td>7.96 (3.25-19.48)</td> <td>&lt;0.0001</td> </tr> <tr> <td colspan="5"><b>Low birth weight</b></td> </tr> <tr> <td>No</td> <td>251 (77.2)</td> <td>1226 (94.9)</td> <td>1.00</td> <td></td> </tr> <tr> <td>Yes</td> <td>74 (22.8)</td> <td>66 (5.1)</td> <td>5.09 (2.30-11.27)</td> <td>&lt;0.0001</td> </tr> </tbody> </table> <p>2. Combined effect of infants small at birth and where the infant slept:</p> <table border="1"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> <th>P value</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Not small at birth</b></td> </tr> <tr> <td>By parents bed</td> <td>74 (23.2)</td> <td>620(48.2)</td> <td>1.00 (ref)</td> <td></td> </tr> <tr> <td>Co-sleeping with parents (smoke)</td> <td>68 (21.3)</td> <td>76 (5.9)</td> <td>9.11 (4.12-20.22)</td> <td>&lt;0.0001</td> </tr> <tr> <td>Co-sleeping with parents (don't smoke)</td> <td>8 (2.5)</td> <td>99 (7.7)</td> <td>1.12 (0.30-4.27)</td> <td>0.86</td> </tr> </tbody> </table>		Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value	<b>Preterm</b>					No	260 (80.5)	1218 (94.6)	1.00		Yes	63 (19.5)	70 (5.4)	7.96 (3.25-19.48)	<0.0001	<b>Low birth weight</b>					No	251 (77.2)	1226 (94.9)	1.00		Yes	74 (22.8)	66 (5.1)	5.09 (2.30-11.27)	<0.0001		Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value	<b>Not small at birth</b>					By parents bed	74 (23.2)	620(48.2)	1.00 (ref)		Co-sleeping with parents (smoke)	68 (21.3)	76 (5.9)	9.11 (4.12-20.22)	<0.0001	Co-sleeping with parents (don't smoke)	8 (2.5)	99 (7.7)	1.12 (0.30-4.27)	0.86
	Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value																																																											
<b>Preterm</b>																																																															
No	260 (80.5)	1218 (94.6)	1.00																																																												
Yes	63 (19.5)	70 (5.4)	7.96 (3.25-19.48)	<0.0001																																																											
<b>Low birth weight</b>																																																															
No	251 (77.2)	1226 (94.9)	1.00																																																												
Yes	74 (22.8)	66 (5.1)	5.09 (2.30-11.27)	<0.0001																																																											
	Cases (%)	Controls (%)	Multivariate OR* (95% CI)	P value																																																											
<b>Not small at birth</b>																																																															
By parents bed	74 (23.2)	620(48.2)	1.00 (ref)																																																												
Co-sleeping with parents (smoke)	68 (21.3)	76 (5.9)	9.11 (4.12-20.22)	<0.0001																																																											
Co-sleeping with parents (don't smoke)	8 (2.5)	99 (7.7)	1.12 (0.30-4.27)	0.86																																																											

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results				
			Another room	85 (26.6)	389 (30.3)	5.18 (2.59-10.38)	<0.0001
<b>Small at birth</b>							
			By parents bed	30 (9.4)	61 (4.7)	3.68 (1.44-9.39)	0.006
			Co-sleeping with parents (smoke)	24 (7.5)	8 (0.6)	37.41 (5.83-239.86)	0.0001
			Co-sleeping with parents (don't smoke)	2 (0.6)	7 (0.5)	15.18 (1.02-225.50)	0.048
			Another room	28 (8.8)	25 (1.9)	79.45 (18.03-350.20)	<0.0001
<p>P value refers to the OR significance  * "Adjusted for infant age, birth centile, high parity, parental unemployment, moving house &gt;one in the last year, young maternal age, any episode of lifelessness, and for the last sleep; change in usual routine, recent infant illness, lack of recent sleep, recent maternal alcohol consumption, sleeping position put down (side or prone) using a dummy, bedding and clothes higher than 10tog, and found with head covered by bedding"</p>							
Blair, 2009 Case-control	<p>SIDS cases were up to two years of age.</p> <p>Controls were the approximately the same age and weight as cases. Two group of controls:</p> <ol style="list-style-type: none"> <li>1. Infants randomly chosen (n=87)</li> <li>2. High risk (i.e. significant predictors of SIDS) (n=82)</li> </ol> <p>England</p>	Co-sleeping: infant sharing the same bed or sofa with an adult or a child.	Multivariate model to test for interaction between co-sleeping and recent alcohol and drug use:				
			<b>Cases versus random controls*</b>		<b>Cases versus high risk controls#</b>		
			<b>OR (95% CI)</b>	<b>P value</b>	<b>OR (95% CI)</b>	<b>P value</b>	
			Infant co-slept in parental bed or sofa for last sleep	5.41 (1.12-26.17)	0.04	5.23 (1.37-19.91)	0.02
			Parental use of alcohol or drugs before last sleep	0.52 (0.10-2.72)	0.44	0.69 (0.16-3.00)	0.62
			Interaction between co-sleeping and alcohol or drug use	53.26 (4.07-696.96)	0.002	11.76 (1.40-99.83)	0.02
<p>Recent alcohol or drug use: &gt;2 units of alcohol or took methadone, cannabis, or amphetamines before last sleep  * Adjusted for infant age, daytime/nighttime sleep, maternal smoking during pregnancy, maternal education, infant found sleeping prone, infant swaddled, gestational age, not sharing room, fair or poor health in last 24 hours  # Adjusted for infant age, daytime/nighttime sleep, maternal smoking during pregnancy, number of live births, young maternal age, poor socioeconomic status, infant found sleeping prone, infant swaddled, infant placed on pillow, gestational age, not sharing room, fair or poor health in last 24 hours</p>							
Brooke, 1997 Case-control	Most cases had two matched controls for age, season and maternity unit.	Classed as "routinely sleeps with parents" and no further details reported.	<b>Risk factor</b>	<b>Cases (%) N=146</b>	<b>Controls (%) N=275</b>	<b>Multivariate OR* (95% CI)</b>	<b>P value</b>
			Routinely sleeps with parents	11/146 (8)	6/275 (2)	2.90 (0.75-11.26)	>0.1
* Adjusted for exposure to smoking, does not regularly change position during sleep, old mattress, maternal age, deprivation score, drug treatment in previous week, routine position put down to sleep,							

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																								
	All infants were less than one year of age.  Scotland		has moved under bed clothes, unmarried mother, social class IV or V, male sex, cot bumper not used routinely, any symptoms in previous week, gestation $\leq 36$ weeks, usually swaddled in previous week, other infant death in family, usually sweaty on waking, tog value $\geq 10$ , mother left school aged $\leq 16$ years, not currently breastfed, $\geq 2$ live births, birth weight $< 2.5$ kg  Reviewer comment: Original study states that the "risk [of SIDS] caused by maternal smoking increased when the infant shared a bed ( $P < 0.005$ )."																								
Carpenter, 2004  Case-control	$\geq 2$ controls selected for every case. Controls selected from birth records or clinic lists to represent live infants of the same age, living in the same survey area at the time.  Reviewer comment: Infant age is not reported by NICE or the original study.  Europe	Bed sharing: all night bed sharing with an adult.	<table border="1"> <thead> <tr> <th>Risk factor</th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Mother did not smoke or bed share</td> <td>249 (34.6)</td> <td>1,621 (67.8)</td> <td>1</td> </tr> <tr> <td>Mother did not smoke, did bed share</td> <td>32 (4.5)</td> <td>139 (5.8)</td> <td>1.56 (0.91-2.68)</td> </tr> <tr> <td>Mother smoked <math>&lt; 10</math> cigarettes/day, did not bed share</td> <td>133 (18.5)</td> <td>328 (13.7)</td> <td>1.52 (1.10-2.09)</td> </tr> <tr> <td>Mother smoked <math>&gt; 10</math> cigarettes/day, did not bed share</td> <td>194 (27.0)</td> <td>247 (10.3)</td> <td>2.43 (1.76-3.36)</td> </tr> <tr> <td>Mother smoked any amount, did bed share</td> <td>111 (15.4)</td> <td>56 (2.3)</td> <td>17.7 (10.3-30.3)</td> </tr> </tbody> </table> <p>"Other risk factors in the multivariate analysis": position last left, others in the household smoked after birth, dummy use, history of apparent life-threatening events, sex, multiple birth/singleton, birthweight, admitted to Special Care Baby Unit (i.e. Neonatal Intensive Care Unit), urinary tract infection in pregnancy, mother's age, previous livebirths, marital status, partner employment</p>	Risk factor	Cases (%)	Controls (%)	Multivariate OR (95% CI)	Mother did not smoke or bed share	249 (34.6)	1,621 (67.8)	1	Mother did not smoke, did bed share	32 (4.5)	139 (5.8)	1.56 (0.91-2.68)	Mother smoked $< 10$ cigarettes/day, did not bed share	133 (18.5)	328 (13.7)	1.52 (1.10-2.09)	Mother smoked $> 10$ cigarettes/day, did not bed share	194 (27.0)	247 (10.3)	2.43 (1.76-3.36)	Mother smoked any amount, did bed share	111 (15.4)	56 (2.3)	17.7 (10.3-30.3)
Risk factor	Cases (%)	Controls (%)	Multivariate OR (95% CI)																								
Mother did not smoke or bed share	249 (34.6)	1,621 (67.8)	1																								
Mother did not smoke, did bed share	32 (4.5)	139 (5.8)	1.56 (0.91-2.68)																								
Mother smoked $< 10$ cigarettes/day, did not bed share	133 (18.5)	328 (13.7)	1.52 (1.10-2.09)																								
Mother smoked $> 10$ cigarettes/day, did not bed share	194 (27.0)	247 (10.3)	2.43 (1.76-3.36)																								
Mother smoked any amount, did bed share	111 (15.4)	56 (2.3)	17.7 (10.3-30.3)																								
Hauck, 2003  Case-control	One control selected for each case. Controls were matched in the following order: maternal race/ethnicity, age	Bed sharing: infant sleeping with $\geq 1$ person on the same sleep surface (e.g. mattress or sofa).	<p>Multivariate analysis:</p> <table border="1"> <thead> <tr> <th>Sharing a bed</th> <th>Cases</th> <th>OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>129</td> <td>1.00 (ref)</td> </tr> <tr> <td>Yes (with mother or mother and father)</td> <td>70</td> <td>1.4 (0.7-2.8)</td> </tr> <tr> <td>Yes (with others)</td> <td>61</td> <td>3.6 (1.4-9.4)</td> </tr> </tbody> </table> <p>* Adjusted for maternal age, marital status, education, and index of prenatal care and the other variables in the model</p>	Sharing a bed	Cases	OR* (95% CI)	No	129	1.00 (ref)	Yes (with mother or mother and father)	70	1.4 (0.7-2.8)	Yes (with others)	61	3.6 (1.4-9.4)												
Sharing a bed	Cases	OR* (95% CI)																									
No	129	1.00 (ref)																									
Yes (with mother or mother and father)	70	1.4 (0.7-2.8)																									
Yes (with others)	61	3.6 (1.4-9.4)																									

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																			
	at death/interview and birth weight. Black infants less than one year of age.  Chicago, United States		N=15 cases shared a sofa during sleep. When these cases were removed along with their matched controls, the ORs for bed sharing were similar.																																			
Klonoff-Cohen, 1995  Case-control	Each case (n=200) was matched to a control (n=200). Controls were randomly selected from all live births and matched for same birth hospital, date of birth, sex and race. All infants were less than one year of age.  Southern California, United States	Bed sharing: routinely sharing a bed with a specified person (e.g. mother, father, other relative, or babysitter during the day).	Cases had a significantly lower birth weight than controls: 3,236g versus 3,459g, p<0.001  <table border="1" data-bbox="814 630 1339 727"> <thead> <tr> <th>Routine bed sharing</th> <th>OR (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Adjusted day</td> <td>1.38 (0.59-3.22)</td> </tr> <tr> <td>Adjusted night</td> <td>1.21 (0.59-2.48)</td> </tr> </tbody> </table> <p>* Adjusted for routine sleep position, passive smoking, breastfeeding, use of intercom, maternal age and education, infant birth weight, and any medical condition at birth</p> <p>“When maternal alcohol and recreational drug use were independently added to the model, the OR for bed sharing during the day and night remained virtually unchanged. There were no interactive effects between bed sharing and passive smoking, alcohol or recreational drugs.”</p>	Routine bed sharing	OR (95% CI)	Adjusted day	1.38 (0.59-3.22)	Adjusted night	1.21 (0.59-2.48)																													
Routine bed sharing	OR (95% CI)																																					
Adjusted day	1.38 (0.59-3.22)																																					
Adjusted night	1.21 (0.59-2.48)																																					
McGarvey, 2006  Case-control	Controls were randomly selected for each case from the birth register, and matched for date or birth, and “the same community concare areas as	Co-sleeping during the last sleep: any shared sleeping arrangement of an infant with an adult in or on a bed, sofa or armchair.  Bed sharing: infants	Bed sharing: <table border="1" data-bbox="863 1182 2011 1430"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Univariate OR* (95% CI)</th> <th>Multivariate OR# (95% CI)</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>Usual pattern</b></td> </tr> <tr> <td>To bed share</td> <td>118 (71)</td> <td>780 (94)</td> <td>1.00 (ref)</td> <td>1.00 (ref)</td> </tr> <tr> <td>To not bed share</td> <td>75 (29)</td> <td>47 (6)</td> <td>5.09 (1.86-13.92)</td> <td>5.20 (1.86-14.50)</td> </tr> <tr> <td colspan="5"><b>Last sleep period</b></td> </tr> <tr> <td>No sharing</td> <td>121 (47)</td> <td>728 (88)</td> <td>1.00 (ref)</td> <td>1.00 (ref)</td> </tr> <tr> <td>Bed sharing</td> <td>128 (49)</td> <td>101 (12)</td> <td>5.30 (2.29-12.24)</td> <td>3.53 (1.40-8.93)</td> </tr> </tbody> </table>		Cases (%)	Controls (%)	Univariate OR* (95% CI)	Multivariate OR# (95% CI)	<b>Usual pattern</b>					To bed share	118 (71)	780 (94)	1.00 (ref)	1.00 (ref)	To not bed share	75 (29)	47 (6)	5.09 (1.86-13.92)	5.20 (1.86-14.50)	<b>Last sleep period</b>					No sharing	121 (47)	728 (88)	1.00 (ref)	1.00 (ref)	Bed sharing	128 (49)	101 (12)	5.30 (2.29-12.24)	3.53 (1.40-8.93)
	Cases (%)	Controls (%)	Univariate OR* (95% CI)	Multivariate OR# (95% CI)																																		
<b>Usual pattern</b>																																						
To bed share	118 (71)	780 (94)	1.00 (ref)	1.00 (ref)																																		
To not bed share	75 (29)	47 (6)	5.09 (1.86-13.92)	5.20 (1.86-14.50)																																		
<b>Last sleep period</b>																																						
No sharing	121 (47)	728 (88)	1.00 (ref)	1.00 (ref)																																		
Bed sharing	128 (49)	101 (12)	5.30 (2.29-12.24)	3.53 (1.40-8.93)																																		

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																																										
	<p>the index case.” Four control infants matched for each case.</p> <p>Reviewer comment: Infant age not reported by NICE or the original study. Cases are included as per SIDS cause of death.</p> <p>Ireland</p>	<p>sharing an adult bed with one or more adult.</p>	<table border="1" data-bbox="863 326 2011 483"> <tr> <td>Co-sleeping (sofa/armchair)</td> <td>11 (4)</td> <td>0</td> <td>-</td> <td>-</td> </tr> <tr> <td colspan="5"><b>Bed sharing and age</b></td> </tr> <tr> <td>0-10 weeks</td> <td>71 (28)</td> <td>16 (2)</td> <td>8.07 (2.24-29.03)</td> <td>8.02 (1.97-32.54)</td> </tr> <tr> <td>10-20 weeks</td> <td>39 (15)</td> <td>36 (4)</td> <td>16.83 (2.95-90.69)</td> <td>6.63 (0.95-45.81)</td> </tr> <tr> <td>21-52 weeks</td> <td>15 (6)</td> <td>36 (4)</td> <td>2.11 (0.40-11.11)</td> <td>1.63 (0.27-10.00)</td> </tr> </table> <p>* Multivariate analysis adjusted for: maternal age, education, smoking, drinking, occurrence of urinary tract infection during pregnancy, social disadvantage <math>\geq</math>three previous live births, z scores for weight by gestation, resuscitation required at birth, male sex, whether breastfeeding was initiated at birth, any history of illness during infant’s lifetime, baby prone to sweating, symptoms in 48 hours prior to last/reference sleep, tog of clothing/bedding <math>\geq</math>10, use of duvets, prone position, absence of routine soother during last/reference sleep period.</p> <p># OR for all univariate analysis was adjusted for infant age at death/interview</p> <p>Interaction between bed sharing and co-sleeping and other risk factors:</p> <table border="1" data-bbox="814 760 2041 1040"> <thead> <tr> <th>Interaction</th> <th>Unadjusted OR (95% CI)</th> <th>Adjusted OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td colspan="3"><b>With bed sharing</b></td> </tr> <tr> <td>Mother smoker</td> <td>6.64 (2.29-19.24)</td> <td>6.35 (1.15-34.81)</td> </tr> <tr> <td>Parental alcohol consumption in last 24 hours</td> <td>3.39 (1.00-11.51)</td> <td>0.39 (0.02-8.71)</td> </tr> <tr> <td colspan="3"><b>With co-sleeping</b></td> </tr> <tr> <td>Mother smoker</td> <td>7.56 (2.62-21.8)</td> <td>8.50 (1.57-45.99)</td> </tr> <tr> <td>Parental alcohol consumption in last 24 hours</td> <td>3.95 (1.19-13.07)</td> <td>0.41 (0.02-8.95)</td> </tr> </tbody> </table> <p>* Adjusted for maternal age, smoking and drinking during pregnancy, social disadvantage, urinary tract infection occurrence, infant z scores at birth, resuscitation at birth, male sex, breastfeeding initiated at birth, history of illness since birth, baby prone to sweating, symptoms/problems in 48 hours prior to death and tog value of clothing and bedding <math>\geq</math>10, use of duvets, absence of routine soother use, placed prone during last sleep period</p> <p>OR for bed sharing, stratified by maternal smoking:</p> <table border="1" data-bbox="814 1256 1724 1354"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>OR (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Mother smoker</td> <td>109 (42)</td> <td>17 (2)</td> <td>13.87 (9.58-20.09)</td> </tr> <tr> <td>Mother non-smoker</td> <td>17 (7)</td> <td>83 (10)</td> <td>2.09 (0.98-4.39)</td> </tr> </tbody> </table> <p>Percent of cases and controls do not equal 100 as tog and z scores at birth were also reported but not included in this data extraction table.</p>	Co-sleeping (sofa/armchair)	11 (4)	0	-	-	<b>Bed sharing and age</b>					0-10 weeks	71 (28)	16 (2)	8.07 (2.24-29.03)	8.02 (1.97-32.54)	10-20 weeks	39 (15)	36 (4)	16.83 (2.95-90.69)	6.63 (0.95-45.81)	21-52 weeks	15 (6)	36 (4)	2.11 (0.40-11.11)	1.63 (0.27-10.00)	Interaction	Unadjusted OR (95% CI)	Adjusted OR* (95% CI)	<b>With bed sharing</b>			Mother smoker	6.64 (2.29-19.24)	6.35 (1.15-34.81)	Parental alcohol consumption in last 24 hours	3.39 (1.00-11.51)	0.39 (0.02-8.71)	<b>With co-sleeping</b>			Mother smoker	7.56 (2.62-21.8)	8.50 (1.57-45.99)	Parental alcohol consumption in last 24 hours	3.95 (1.19-13.07)	0.41 (0.02-8.95)		Cases (%)	Controls (%)	OR (95% CI)	Mother smoker	109 (42)	17 (2)	13.87 (9.58-20.09)	Mother non-smoker	17 (7)	83 (10)	2.09 (0.98-4.39)
Co-sleeping (sofa/armchair)	11 (4)	0	-	-																																																									
<b>Bed sharing and age</b>																																																													
0-10 weeks	71 (28)	16 (2)	8.07 (2.24-29.03)	8.02 (1.97-32.54)																																																									
10-20 weeks	39 (15)	36 (4)	16.83 (2.95-90.69)	6.63 (0.95-45.81)																																																									
21-52 weeks	15 (6)	36 (4)	2.11 (0.40-11.11)	1.63 (0.27-10.00)																																																									
Interaction	Unadjusted OR (95% CI)	Adjusted OR* (95% CI)																																																											
<b>With bed sharing</b>																																																													
Mother smoker	6.64 (2.29-19.24)	6.35 (1.15-34.81)																																																											
Parental alcohol consumption in last 24 hours	3.39 (1.00-11.51)	0.39 (0.02-8.71)																																																											
<b>With co-sleeping</b>																																																													
Mother smoker	7.56 (2.62-21.8)	8.50 (1.57-45.99)																																																											
Parental alcohol consumption in last 24 hours	3.95 (1.19-13.07)	0.41 (0.02-8.95)																																																											
	Cases (%)	Controls (%)	OR (95% CI)																																																										
Mother smoker	109 (42)	17 (2)	13.87 (9.58-20.09)																																																										
Mother non-smoker	17 (7)	83 (10)	2.09 (0.98-4.39)																																																										

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																				
<p>Mitchell, 1997</p> <p>Case-control</p>	<p>Controls were randomly selected from the same data recorded by community child health nurses as for cases.</p> <p>Mean infant age at:</p> <ul style="list-style-type: none"> <li>Initial visit for cases (n=127) and controls (n=922) was 2.6 and 2.5 weeks, respectively.</li> <li>Two month contact for cases and controls was 9.1 and 9.2 weeks, respectively.</li> </ul> <p>New Zealand</p>	<p>Not reported in study.</p>	<p>Data on infants were recorded by a nurse at two time points: initial contact and two months of age.</p> <p>Bed sharing and maternal smoking for infants:</p> <table border="1" data-bbox="814 415 1913 574"> <thead> <tr> <th>Bed sharing</th> <th>Maternal smoking</th> <th>Initial OR* (95% CI)</th> <th>Two months OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>No</td> <td>1.00</td> <td>1.00</td> </tr> <tr> <td>No</td> <td>Yes</td> <td>1.68 (0.84-3.34)</td> <td>1.43 (0.58-3.51)</td> </tr> <tr> <td>Yes</td> <td>No</td> <td>0.55 (0.17-1.78)</td> <td>1.03 (0.21-5.06)</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>5.01 (2.01-12.46)</td> <td>5.02 (1.05-24.05)</td> </tr> </tbody> </table> <p>* Adjusted for maternal age, marital status, age mother left school, previous number of pregnancies, infant's sex, ethnicity of infant, birthweight, sleep position, breastfeeding, bed sharing/maternal smoking combinations.</p>	Bed sharing	Maternal smoking	Initial OR* (95% CI)	Two months OR* (95% CI)	No	No	1.00	1.00	No	Yes	1.68 (0.84-3.34)	1.43 (0.58-3.51)	Yes	No	0.55 (0.17-1.78)	1.03 (0.21-5.06)	Yes	Yes	5.01 (2.01-12.46)	5.02 (1.05-24.05)
Bed sharing	Maternal smoking	Initial OR* (95% CI)	Two months OR* (95% CI)																				
No	No	1.00	1.00																				
No	Yes	1.68 (0.84-3.34)	1.43 (0.58-3.51)																				
Yes	No	0.55 (0.17-1.78)	1.03 (0.21-5.06)																				
Yes	Yes	5.01 (2.01-12.46)	5.02 (1.05-24.05)																				
<p>Ruys, 2007</p> <p>Case-control</p>	<p>Cases were up to five months of age.</p> <p>Controls were between one month and five months of age.</p> <p>Infants co-sleeping on a sofa or chair were</p>	<p>Bed sharing for cases: co-sleeping with at least one parent when deceased. Co-sleeping on a sofa or chair excluded.</p> <p>Bed sharing for controls: bed sharing</p>	<p>N=36/125 (25%) of infants bed shared during the last night. Eight of these infants were "unaccustomed to this."</p> <p>Interaction of smoking by one or both parents and "cot death" in infants up to five months of age:</p> <table border="1" data-bbox="814 1214 1535 1435"> <thead> <tr> <th>Bed sharing</th> <th>Smoking by parents</th> <th>OR (95% CI)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">No</td> <td>No</td> <td>1.0</td> </tr> <tr> <td>One parent</td> <td>2.3 (1.4-3.8)</td> </tr> <tr> <td>Both parents</td> <td>3.9 (2.3-6.6)</td> </tr> <tr> <td rowspan="3">Yes</td> <td>No</td> <td>1.0</td> </tr> <tr> <td>One parent</td> <td>2.4 (0.8-7.7)</td> </tr> <tr> <td>Both parents</td> <td>14.6 (4.6-46)</td> </tr> </tbody> </table>	Bed sharing	Smoking by parents	OR (95% CI)	No	No	1.0	One parent	2.3 (1.4-3.8)	Both parents	3.9 (2.3-6.6)	Yes	No	1.0	One parent	2.4 (0.8-7.7)	Both parents	14.6 (4.6-46)			
Bed sharing	Smoking by parents	OR (95% CI)																					
No	No	1.0																					
	One parent	2.3 (1.4-3.8)																					
	Both parents	3.9 (2.3-6.6)																					
Yes	No	1.0																					
	One parent	2.4 (0.8-7.7)																					
	Both parents	14.6 (4.6-46)																					

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																																				
	<p>excluded from the study.</p> <p>The Netherlands</p>	<p>in the previous night for at least part of the night.</p>	<p>Reviewer comment: Primary article was retrieved to extract the following results not captured in NICE's evidence table.</p> <p>'Odds ratio (95% CI) for cot death estimating the increased risk association with "bed sharing with parents during the last night" in two different models with respect to mother's breastfeeding status at one, two, three and four to five months of age, based on a comparison with a control group, adjusted for age, and smoking by one or both parents'</p> <table border="1" data-bbox="814 537 1948 727"> <thead> <tr> <th rowspan="2">Model</th> <th colspan="4">Age</th> </tr> <tr> <th>One month</th> <th>Two months</th> <th>Three months</th> <th>Four to five months</th> </tr> </thead> <tbody> <tr> <td>Not adjusted for breastfeeding</td> <td>9.14 (4.2-19.4)</td> <td>4.0 (2.3-6.7)</td> <td>1.7 (0.9-3.4)</td> <td>1.3 (1.0-1.6)</td> </tr> <tr> <td>Adjusted for breastfeeding</td> <td>11 (5-24)</td> <td>4.9 (2.8-8.4)</td> <td>2.1 (1.1-4.2)</td> <td>0.9 (0.3-2.7)</td> </tr> </tbody> </table>	Model	Age				One month	Two months	Three months	Four to five months	Not adjusted for breastfeeding	9.14 (4.2-19.4)	4.0 (2.3-6.7)	1.7 (0.9-3.4)	1.3 (1.0-1.6)	Adjusted for breastfeeding	11 (5-24)	4.9 (2.8-8.4)	2.1 (1.1-4.2)	0.9 (0.3-2.7)																																	
Model	Age																																																						
	One month	Two months	Three months	Four to five months																																																			
Not adjusted for breastfeeding	9.14 (4.2-19.4)	4.0 (2.3-6.7)	1.7 (0.9-3.4)	1.3 (1.0-1.6)																																																			
Adjusted for breastfeeding	11 (5-24)	4.9 (2.8-8.4)	2.1 (1.1-4.2)	0.9 (0.3-2.7)																																																			
<p>Tappin, 2005</p> <p>Case-control</p>	<p>Two controls selected for each case. Controls were births immediately before and after in the same maternity unit. No other matching was used.</p> <p>Reviewer comment: original study describes that cases were identified by expert pediatric pathologist following SIDS classification.</p> <p>Scotland</p>	<p>Bed sharing: infants spending most of the last sleep in room with parents and bed shared for some or all of last sleep.</p> <p>Co-sleeping: sharing a sleep surface during last sleep includes bed, couch, and chair.</p>	<p>Sleeping environment during last sleep: Of the 46 cases who bed shared during the last sleep, n=40 were found in parents' bed (n=2 were in a cot, n=3 were in a Moses basket, n=1 was unknown).</p> <table border="1" data-bbox="814 850 2039 1138"> <thead> <tr> <th>Sleep place and sharing during last sleep</th> <th>Cases (%) N=123</th> <th>Controls (%) N=263</th> <th>Multivariate OR (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Room with parent(s) not sharing</td> <td>44 (36)</td> <td>167 (63)</td> <td>1</td> </tr> <tr> <td>Room with parent(s) some bed sharing</td> <td>46 (37)</td> <td>44 (17)</td> <td>3.49 (1.54-7.92)</td> </tr> <tr> <td>Separate room not sharing</td> <td>15 (12)</td> <td>43 (19)</td> <td>3.26 (1.03-10.35)</td> </tr> <tr> <td>Separate room some bed sharing</td> <td>0</td> <td>6 (2)</td> <td>Numbers too small</td> </tr> <tr> <td>Share couch</td> <td>14 (11)</td> <td>2 (1)</td> <td>66.95 (2.81-1596)</td> </tr> <tr> <td>Share chair</td> <td>2 (2)</td> <td>0</td> <td>Numbers too small</td> </tr> <tr> <td>Share cot with twin</td> <td>2 (2)</td> <td>1 (1)</td> <td>Numbers too small</td> </tr> </tbody> </table> <p>*Multivariate model included: maternal age, quadratic function of maternal age, birth weight, infant age, parity, either parent smoked, laid prone to sleep, laid on side to sleep, found with head covered in past, found with head covered after last sleep, infant routinely slept on a used infant mattress.</p> <p>Bed sharing for infants &lt;11 weeks at last sleep:</p> <table border="1" data-bbox="814 1289 1854 1446"> <thead> <tr> <th>Bed sharing</th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Not sharing</td> <td>20 (16)</td> <td>155 (59)</td> <td>1</td> </tr> <tr> <td>Bed sharing</td> <td>41 (33)</td> <td>34 (13)</td> <td>10.20 (2.99-34.8)</td> </tr> <tr> <td>Bed sharing &lt;2 hours</td> <td>7 (6)</td> <td>5 (2)</td> <td>29.15 (3.62-235)</td> </tr> <tr> <td>Bed sharing 2-5 hours</td> <td>15 (12)</td> <td>16 (6)</td> <td>2.97 (0.48-18.6)</td> </tr> </tbody> </table>	Sleep place and sharing during last sleep	Cases (%) N=123	Controls (%) N=263	Multivariate OR (95% CI)	Room with parent(s) not sharing	44 (36)	167 (63)	1	Room with parent(s) some bed sharing	46 (37)	44 (17)	3.49 (1.54-7.92)	Separate room not sharing	15 (12)	43 (19)	3.26 (1.03-10.35)	Separate room some bed sharing	0	6 (2)	Numbers too small	Share couch	14 (11)	2 (1)	66.95 (2.81-1596)	Share chair	2 (2)	0	Numbers too small	Share cot with twin	2 (2)	1 (1)	Numbers too small	Bed sharing	Cases (%)	Controls (%)	Multivariate OR* (95% CI)	Not sharing	20 (16)	155 (59)	1	Bed sharing	41 (33)	34 (13)	10.20 (2.99-34.8)	Bed sharing <2 hours	7 (6)	5 (2)	29.15 (3.62-235)	Bed sharing 2-5 hours	15 (12)	16 (6)	2.97 (0.48-18.6)
Sleep place and sharing during last sleep	Cases (%) N=123	Controls (%) N=263	Multivariate OR (95% CI)																																																				
Room with parent(s) not sharing	44 (36)	167 (63)	1																																																				
Room with parent(s) some bed sharing	46 (37)	44 (17)	3.49 (1.54-7.92)																																																				
Separate room not sharing	15 (12)	43 (19)	3.26 (1.03-10.35)																																																				
Separate room some bed sharing	0	6 (2)	Numbers too small																																																				
Share couch	14 (11)	2 (1)	66.95 (2.81-1596)																																																				
Share chair	2 (2)	0	Numbers too small																																																				
Share cot with twin	2 (2)	1 (1)	Numbers too small																																																				
Bed sharing	Cases (%)	Controls (%)	Multivariate OR* (95% CI)																																																				
Not sharing	20 (16)	155 (59)	1																																																				
Bed sharing	41 (33)	34 (13)	10.20 (2.99-34.8)																																																				
Bed sharing <2 hours	7 (6)	5 (2)	29.15 (3.62-235)																																																				
Bed sharing 2-5 hours	15 (12)	16 (6)	2.97 (0.48-18.6)																																																				



Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results				
			Bed sharing >5 hours	18 (15)	13 (5)	13.92 (2.80-69)	
			Outside edge 1 parent	7 (6)	10 (4)	7.63 (1.27-46)	
			Outside edge 2/3 people	15 (12)	10 (4)	7.06 (1.16-43)	
			Between 2/3 people	17 (14)	8 (3)	28.64 (4.17-197)	
			* Multivariate model included: maternal age, quadratic function of maternal age, birth weight, infant age, parity, either parent smoked, laid prone to sleep, laid on side to sleep, found with head covered in past, found with head covered after last sleep, infant routinely slept on a used infant mattress.				
			Interaction between bed sharing (i.e. infants spending most of the last sleep in a room with parents and bed shared with some/all of last sleep) and other factors:				
			<b>Risk factor</b>	<b>Cases mean (SD)</b>	<b>Controls mean (SD)</b>	<b>Multivariate OR (95% CI)</b>	<b>P value</b>
			Birth weight (kg)	2.89 (0.65)	3.39 (0.56)	0.67 (0.18-2.47)	0.545
			Maternal age (years)	25.2 (5.8)	28.9 (5.7)	1.00 (0.88-1.14)	0.975
			Quadratic function of maternal age	NR	NR	1.01 (0.99-1.03)	0.356
			Infant age (weeks)	13.6 (9.5)	16.6 (9.3)	0.88 (0.78-0.99)	0.035
			Infant age (weeks) controlled for gestation	12.0 (10.1)	16.1 (9.4)	0.88 (0.78-1.00)	0.042
			Parity	2.34 (1.3)	1.81 (1.0)	0.76 (0.40-1.42)	0.388
				<b>N (%)</b>	<b>N (%)</b>		
			Found in past with head covered	6 (5)	10 (4)	0.15 (0.02-1.32)	0.088
			Found after last sleep head covered	3 (2)	2 (1)	0.09 (0.00-1.99)	0.128
			Routine used infant mattress	22 (18)	22 (8)	0.26 (0.05-1.30)	0.101
			Placed prone last sleep	1 (1)	3 (1)	0.34 (0.00-115)	0.715
			Placed on side last sleep	12 (10)	10 (4)	0.60 (0.11-3.20)	0.550
			Either parent smoked	36 (29)	17 (6)	5.89 (0.74-47)	0.094
			Mother smoked	32 (26)	15 (6)	1.75 (0.34-9.13)	0.505
			NR – not reported in NICE evidence table				
			* Multivariate model included: maternal age, quadratic function of maternal age, birth weight, infant age, parity, either parent smoked, laid prone to sleep, laid on side to sleep, found with head covered in past, found with head covered after last sleep, infant routinely slept on a used infant mattress.				
			Reviewer comment:				
			The following results were extracted from the original study:				
			<ul style="list-style-type: none"> <li>The strongest interaction with ["in room with parents bed sharing"] during last sleep compared</li> </ul>				

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																																																								
			<p>with ["in room with parents not bed sharing"] was infant age (P=0.035), even after control for preterm gestation (P=0.042) [see table above].</p> <ul style="list-style-type: none"> <li>The largest difference in associated risk comparing younger with older infants was seen when the data were divided at 11 weeks (OR 9.51 95% CI 1.68, 53.8), P =0.01. Of 46 bed sharing deaths, 33 (72%) occurred in infants &lt;11 weeks.</li> <li>For arbitrarily chosen age groups, the associated risk of bed sharing was: <ul style="list-style-type: none"> <li>&lt;6 weeks: 59% cases, 17% controls (multivariate OR 17.49, 95% CI 1.93, 158)</li> <li>6 to 11 weeks: 48% cases, 15% controls (OR 7.64, 95% CI 1.71, 34.24)</li> <li>&gt;11 weeks: 18% cases, 17% controls (OR 1.07, 95% CI 0.32, 3.56)</li> </ul> </li> </ul>																																																																								
<p>Vennemann, 2009</p> <p>Case-control</p>	<p>Controls were from the same vital registration office as cases, and matched for age, gender, religion, and sleep time.</p> <p>Reviewer comment: Infant age was not reported in the guideline. The original study reports that SIDS cases were determined by a multidisciplinary panel.</p> <p>Germany</p>	<p>Not reported in study.</p> <p>Guideline states: "bed sharing; parental bed (did not use the term bed sharing) Co-sleeping; sofa (did not use the term co-sleeping)."</p>	<p>Sleep environment during last sleep/reference sleep:</p> <table border="1" data-bbox="814 634 1745 954"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td colspan="4"><b>Bed</b></td> </tr> <tr> <td>Own bed</td> <td>221 (66.4)</td> <td>735 (73.7)</td> <td>1.00</td> </tr> <tr> <td>Bed with siblings</td> <td>4 (1.2)</td> <td>2 (0.2)</td> <td>1.12 (0.03-37.26)</td> </tr> <tr> <td>Parental bed</td> <td>42 (12.6)</td> <td>74 (7.4)</td> <td>2.81 (0.81-9.75)</td> </tr> <tr> <td>Sofa</td> <td>14 (4.2)</td> <td>13 (1.3)</td> <td>3.69 (0.86-15.84)</td> </tr> <tr> <td>Other</td> <td>28 (8.4)</td> <td>90 (9.0)</td> <td>1.85 (0.78-4.37)</td> </tr> <tr> <td colspan="4"><b>Bed sharing during last sleep</b></td> </tr> <tr> <td>No</td> <td>285 (85.6)</td> <td>909 (91.1)</td> <td>1.00</td> </tr> <tr> <td>Yes</td> <td>48 (14.4)</td> <td>89 (8.9)</td> <td>2.73 (1.34-5.55)</td> </tr> </tbody> </table> <p>* Adjusted for sleep position, breastfeeding, maternal smoking in pregnancy, family status, socioeconomic status, maternal age at delivery, previous live birth, birth weight, extra heating of infant. Other factors in multivariate model: home, room infant slept in, position placed to sleep, position found, pacifier use, bedding during last sleep, pillow used during last sleep, sheepskin used, waterproof layer under infant.</p> <p>Sleep environment during the last four weeks:</p> <table border="1" data-bbox="814 1166 1843 1421"> <thead> <tr> <th></th> <th>Cases (%)</th> <th>Controls (%)</th> <th>Multivariate OR* (95% CI)</th> </tr> </thead> <tbody> <tr> <td colspan="4"><b>Bed</b></td> </tr> <tr> <td>Own bed</td> <td>234 (73.2)</td> <td>733 (73.5)</td> <td>1.00</td> </tr> <tr> <td>Bed with siblings</td> <td>6 (1.8)</td> <td>3 (0.3)</td> <td>0.76 (0.09-6.40)</td> </tr> <tr> <td>Carriage</td> <td>16 (4.8)</td> <td>67 (6.7)</td> <td>1.10 (0.36-3.37)</td> </tr> <tr> <td>Parental bed</td> <td>26 (7.8)</td> <td>67 (6.7)</td> <td>0.76 (0.26-2.17)</td> </tr> <tr> <td>Sofa</td> <td>5 (1.5)</td> <td>15 (1.5)</td> <td>1.87 (0.28-12.15)</td> </tr> <tr> <td>Other</td> <td>36 (10.8)</td> <td>11 (11.2)</td> <td>1.35 (0.69-2.68)</td> </tr> </tbody> </table>		Cases (%)	Controls (%)	Multivariate OR* (95% CI)	<b>Bed</b>				Own bed	221 (66.4)	735 (73.7)	1.00	Bed with siblings	4 (1.2)	2 (0.2)	1.12 (0.03-37.26)	Parental bed	42 (12.6)	74 (7.4)	2.81 (0.81-9.75)	Sofa	14 (4.2)	13 (1.3)	3.69 (0.86-15.84)	Other	28 (8.4)	90 (9.0)	1.85 (0.78-4.37)	<b>Bed sharing during last sleep</b>				No	285 (85.6)	909 (91.1)	1.00	Yes	48 (14.4)	89 (8.9)	2.73 (1.34-5.55)		Cases (%)	Controls (%)	Multivariate OR* (95% CI)	<b>Bed</b>				Own bed	234 (73.2)	733 (73.5)	1.00	Bed with siblings	6 (1.8)	3 (0.3)	0.76 (0.09-6.40)	Carriage	16 (4.8)	67 (6.7)	1.10 (0.36-3.37)	Parental bed	26 (7.8)	67 (6.7)	0.76 (0.26-2.17)	Sofa	5 (1.5)	15 (1.5)	1.87 (0.28-12.15)	Other	36 (10.8)	11 (11.2)	1.35 (0.69-2.68)
	Cases (%)	Controls (%)	Multivariate OR* (95% CI)																																																																								
<b>Bed</b>																																																																											
Own bed	221 (66.4)	735 (73.7)	1.00																																																																								
Bed with siblings	4 (1.2)	2 (0.2)	1.12 (0.03-37.26)																																																																								
Parental bed	42 (12.6)	74 (7.4)	2.81 (0.81-9.75)																																																																								
Sofa	14 (4.2)	13 (1.3)	3.69 (0.86-15.84)																																																																								
Other	28 (8.4)	90 (9.0)	1.85 (0.78-4.37)																																																																								
<b>Bed sharing during last sleep</b>																																																																											
No	285 (85.6)	909 (91.1)	1.00																																																																								
Yes	48 (14.4)	89 (8.9)	2.73 (1.34-5.55)																																																																								
	Cases (%)	Controls (%)	Multivariate OR* (95% CI)																																																																								
<b>Bed</b>																																																																											
Own bed	234 (73.2)	733 (73.5)	1.00																																																																								
Bed with siblings	6 (1.8)	3 (0.3)	0.76 (0.09-6.40)																																																																								
Carriage	16 (4.8)	67 (6.7)	1.10 (0.36-3.37)																																																																								
Parental bed	26 (7.8)	67 (6.7)	0.76 (0.26-2.17)																																																																								
Sofa	5 (1.5)	15 (1.5)	1.87 (0.28-12.15)																																																																								
Other	36 (10.8)	11 (11.2)	1.35 (0.69-2.68)																																																																								

Author, Year; Study Design	Cases and Controls; Location of Population	Definitions	Results																																
			<b>How often infant taken into parental bed</b>																																
			Never	184 (55.8)	630 (63.2)	1.00																													
			Sometimes every night	146 (44.2)	367 (36.8)	1.08 (0.61 -1.66)																													
			<p>* Adjusted for sleep position, breastfeeding, maternal smoking in pregnancy, family status, socioeconomic status, maternal age at delivery, previous live birth, birth weight, extra heating of infant. Other factors in multivariate model: home, room infant slept in, position placed to sleep, position found, pacifier use, bedding during last sleep, pillow used during last sleep, sheepskin used, waterproof layer under infant.</p>																																
			<p>Reviewer comment: The following results were extracted from the original study.</p>																																
			<table border="1"> <thead> <tr> <th data-bbox="814 695 1226 756" rowspan="2">Bed sharing and age of infant</th> <th colspan="2" data-bbox="1226 695 1587 724">Sleep environment N (%)</th> <th colspan="2" data-bbox="1587 695 1919 724">Multivariate*</th> </tr> <tr> <th data-bbox="1226 724 1394 756">Cases</th> <th data-bbox="1394 724 1587 756">Controls</th> <th data-bbox="1587 724 1730 756">OR</th> <th data-bbox="1730 724 1919 756">95% CI</th> </tr> </thead> <tbody> <tr> <td data-bbox="814 756 1226 786">Bed shared and &lt;13 weeks</td> <td data-bbox="1226 756 1394 786">27 (8.1)</td> <td data-bbox="1394 756 1587 786">28 (2.8)</td> <td data-bbox="1587 756 1730 786">19.86</td> <td data-bbox="1730 756 1919 786">2.33-169.54</td> </tr> <tr> <td data-bbox="814 786 1226 815">Bed shared and &gt;13 weeks</td> <td data-bbox="1226 786 1394 815">21 (6.3)</td> <td data-bbox="1394 786 1587 815">61 (6.1)</td> <td data-bbox="1587 786 1730 815">1.02</td> <td data-bbox="1730 786 1919 815">0.44-2.36</td> </tr> <tr> <td data-bbox="814 815 1226 844">Bed not shared and &lt;13 weeks</td> <td data-bbox="1226 815 1394 844">87 (26.1)</td> <td data-bbox="1394 815 1587 844">289 (29.0)</td> <td data-bbox="1587 815 1730 844">2.65</td> <td data-bbox="1730 815 1919 844">0.42-16.84</td> </tr> <tr> <td data-bbox="814 844 1226 886">Bed not shared and &gt;13 weeks</td> <td data-bbox="1226 844 1394 886">198 (59.5)</td> <td data-bbox="1394 844 1587 886">620 (62.1)</td> <td data-bbox="1587 844 1730 886">1.00</td> <td data-bbox="1730 844 1919 886">--</td> </tr> </tbody> </table>				Bed sharing and age of infant	Sleep environment N (%)		Multivariate*		Cases	Controls	OR	95% CI	Bed shared and <13 weeks	27 (8.1)	28 (2.8)	19.86	2.33-169.54	Bed shared and >13 weeks	21 (6.3)	61 (6.1)	1.02	0.44-2.36	Bed not shared and <13 weeks	87 (26.1)	289 (29.0)	2.65	0.42-16.84	Bed not shared and >13 weeks	198 (59.5)	620 (62.1)	1.00	--
Bed sharing and age of infant	Sleep environment N (%)		Multivariate*																																
	Cases	Controls	OR	95% CI																															
Bed shared and <13 weeks	27 (8.1)	28 (2.8)	19.86	2.33-169.54																															
Bed shared and >13 weeks	21 (6.3)	61 (6.1)	1.02	0.44-2.36																															
Bed not shared and <13 weeks	87 (26.1)	289 (29.0)	2.65	0.42-16.84																															
Bed not shared and >13 weeks	198 (59.5)	620 (62.1)	1.00	--																															
			<p>* Adjusted for sleep position, breastfeeding, maternal smoking in pregnancy, family status, socioeconomic status, maternal age at delivery, bed sharing, previous live births, birth weight, and extra heating of the infant.</p>																																

## Appendix F: Decision-Making for Safer Infant Sleep

