Safe Sleep Essentials

Education on safe infant sleep for staff and carers within the Child, Youth and Family service.

Facilitators Guide

www.changeforourchildren.co.nz

April 2013

change FOR OUR children
different thinking - different results

Atawhaitia ahau i roto moemoea
(From my earliest beginnings, pursue protection so that I may dream.)

Words given to the Safe Start project by Whaea Terehia Kipa

Safe Sleep Essentials
Education on safe infant sleep for staff and carers
within the Child, Youth and Family service

Facilitator's Guide
Stephanie Cowan

PO Box 36406, Christchurch, 8146, New Zealand
Tel: +64 (3) 379 6686 Fax: +64 (3) 353 9269
www.changeforourchildren.co.nz

April 2013

Contents

Welcome

Welcome to your new role of safe sleep champion and the current focus on preventing deaths from accidental suffocation in your service. Some of you may be new to this work, others more familiar with the issues. We appreciate you all for your interest, commitment and potential to bring change to the children of New Zealand in the form of safe sleep.

This programme addresses a fundamental principle of life - oxygen sufficiency. To be healthy and survive, **babies need sufficient oxygen** as they develop in the womb, and as they live and sleep, once born. Creating high awareness of this fact and how it translates into care decisions for babies is your work as a safe sleep champion, in this role.

The education has two aspects:

- *Baby Essentials Online* is a foundation programme of essential information for protecting a baby's life. It's purpose is to align people from across society with key principles and encourage action by all.
- *Through the tubes* is the focus of current work and has a specific focus on the group of sudden infant death clearly due to accidental suffocation.

Your role is two pronged:

- to bring this education to your peers and
- to work within your service to develop systematic action on safe sleep for babies

Support is all around for this work. District health boards are stepping up their commitment and your own service is developing policy and intervention expectations, too. As well, you have the support of Whakawhetu (Maori), Taha (Pacific) and Change for our Children (general) as three agencies with dedicated funding for education approaches to preventing sudden infant death.

Remember you are part of a team. You are leading locally, connected nationally and influencing globally.

We wish you well.

Stephanie Cowan
Director
Change for our Children

Section 1. Presentation

Preparation for presenting *'Through the Tubes'* to others

INTRODUCTION

'*Through the Tubes'* is a package of essential understandings for protecting a baby from accidental suffocation and promoting the importance of 'sufficient oxygen' for growth and survival of babies. It has been designed to eliminate the mystery that once surrounded sudden infant death (SUDI, SIDS or cot death). We now know the main risk factors and so most deaths are preventable. This presentation has been designed for all who have a role in supporting families.

The presentation uses the heavily visual pecha kucha (pe-chuck-cha) format for projecting a vision: 20 images, 20 seconds per slide, no words. This approach enables the education to cross the boundaries of language, culture and profession, and draw more people to its core message. In stepping away from a traditional lecture type format, we hope to facilitate the translation of complex information into everyday language that can be clearly understood in communities.

PRESENTING

Principle: Protecting children is everyone's business

Purpose: To emphasise the essential nature of sufficient oxygen to protecting a baby's life and the need for parents and carers to understand developmental vulnerability.

Time: Allow 15 minutes all up: 7 minutes for the presentation and 8 minutes for discussion.

Resource: The 20 slide MS power point presentation, 'Through the tubes' and other resources for download or copying, are available at www.changeforourchildren.co.nz.

Introduce presentation: Open with: 'Through the tubes' is a national programme of education for protecting babies from accidental suffocation. It has been designed specifically for use in busy work settings and to include every person in the organisation. There are two parts: information update (understanding) and skill practice (doing). This presentation is the "understanding" part. I bring it to you as your peer, not as an expert. We will have a discussion at the end of the session. I will take responsibility for keeping to time. We have allocated 15 minutes all up for this part."

Presentation: Use the "slide guide" on pages 7 and 8 for explaining each slide. Present images at a steady pace and the information as neutral fact. Resist the temptation to understate or overstate the information, or to talk too much to each slide. Let the images do their work, too.

Discussion: Facilitate a discussion that encourages people to respond to the information ("How was that for you?", "What are your first thoughts?"), highlight specific learning ("What did you learn in particular?"), apply it to their practice ("What does this mean for us as ...?") Invite comments and reactions. Hear these. Avoid being drawn into defending information or opinions. Recognise the difference between what is opinion and what is fact. Direct any questions that you cannot answer to a trusted expert, or to Change for our Children. We will check it out with the appropriate source on your behalf. Remember, you are a *peer educator* in this situation. You do not need to know all the answers yourself. You are part of a team.

Close and Link: "Let's move now from why we need to act to what we need to do. Our focus for the next 15 minutes will be discussing 'Through the tubes' information in brief interventions.

Tips on presenting

The CME principle

Remember to make your presentation **C**lear, **M**emorable and **E**mpowering

- build on strengths, experience, knowledge, what is currently going well
- be clear talk in bullets not paragraphs, lift out key points and summarise
- personalise make memorable by sharing a story, using a prop ...
- empower leave people with more control; with ways to act on what they know

Bring people with you

How people receive information depends on how they see things - on their particular beliefs, expectations, experiences, environments and backgrounds. These can either free people to take on new information and ideas, or block them and cause defensiveness and resistance.

As presenters we need to work gently to influence -

- vulnerability Does this concern me?
- seriousness Do I believe this is important?
- degree of control Can I do anything about this?
- action triggers Is this a good time to change things?

Tip	Example
Open	Open strongly to engage people, draw them in
Set-up	Take time to set up expectations. This is about … We expect ...
Package	Consider appropriate context (cultural, professional …) for group
Number	There are 3 points here, 1 …, 2…, 3…
Emphasise	… This is important …
Repeat	60 children … That's 60 children who ...
Talk	In punchy bullet points not waffled paragraphs
Restate	Let's look at that another way …
Focus	See here (point)
Bridge	We've looked at facts, now let's look at how to influence ...
Question	So what do you see as positives here?
Invite	Would someone like to comment on that?
Affirm	These are good questions
Summarise	Let's just pull things together here.
Close	Close strongly to share accountability for change

1.Title slide: Through the tubes

- This presentation is about protecting babies from accidental suffocation, especially when they sleep.
- The slides that follow emphasise the importance of **oxygen being able to get 'through the tubes'** to support infant growth, health and survival.
- Thank you for participating, My name is ...

2.Theme: Doing things differently

- Like the green man, we have stepped out of line here; done things differently
- And that's what we all need to do if we are to change infant death rates in vulnerable populations, because
- **old ways get old results.**
- So this is pecha kucha (pe—chuck—cha) : 20 slides, no words, a fresh way to present

3.Theme: Triple protection model

Around the world, the triple risk model continues to shape our prevention approach. Each leg of stool represents a condition of the triple protection response:

- face-up during the critical stage of development
- face clear in the sleeping environment
- smokefree to reduce vulnerability of the baby

4.Theme: Oxygen is life

Here we have vitality, energy, life. Oxygen is at the heart of protecting life. In simple terms we need oxygen to convert food into energy.

- Oxygen travels through a system of tubes (blood vessels and airways)
- Some babies do not get the oxygen they need to survive and thrive.
- Oxygen must always be able to get 'though these tubes'.

5.Theme: O_2 in pregnancy

In pregnancy O_2 reaches babies through blood vessels (not airways). Smoking slows babies' oxygen supply in two key ways:

- Nicotine narrows blood vessels so less *blood* flows through them
- Carbon monoxide replaces oxygen so there is less *oxygen* travelling in the blood
- Babies develop as if not enough oxygen is normal. **It's not.** It weakens wake-up reflexes and health

6.Theme: Joining the dots

- It matters where you grow. It influence vulnerability so pregnancy conditions needs to be part of your safe sleep talk, too.
- However, you may need to join the dots for people between pregnancy and sleep, so that smokefree advice makes sense.
- For example, people who smoke need to understand that smoking in pregnancy sets babies up with blunted responses to suffocation risks once born.

7.Theme: Development

- Babies are not little adults. People may not know the important ways in which babies are different
- Eg. They have large heads, loose jaws and only breathe through their noses. These things can put airways at risk if babies get into unsafe positions.
- Older babies have different risks from being more mobile. They need a sleeping space that protects them from harm when they explore.

8.Theme: Gravity and the head

A third of a baby's head is behind the spine when upright. This 'bulge' is like a weight keeping babies safe when they lie flat and on their backs.

- If the head falls forward, or is pushed forward by eg pillows, pressure upwards on the chin can force large tongue to block airway.
- Curved neck position are safe in utero but can be dangerous once born when baby is using airways, and only breathes through the nose.

9.Theme: Positioning

Position is critical to breathing. A large and heavy head can fall forward easily in certain positions.

- If oxygen cannot get "through the tubes" and into blood, babies die.
- This can happen in 4 ways;
  - a covered face,
  - a pinched nose,
  - chin to chest position,
  - or pressure on or against a small chest
- Older babies, by their own movements can get into risk situations

10.Theme: Airways at risk

Position is critical for sleeping babies

- positions they are placed in
- positions they may get into when no one is watching

Avoid 'chin to chest' positions that can happen if babies :

- slump, crumple or are forced into a curved position by gravity, pillows, slings etc
- get into a face down position

We need prevention to focus on the common **mechanism** of death.

11.Theme: Sleep locations

- Some pose more risk to babies than others. Hazards can be in the form of pillows, loose bedding, makeshift arrangements, couches, other people, too far from carers
- While couches and adult beds carry a higher risk, babies die in cots and bassinets, too.
- Risk of accidental suffocation is increased in **any sleeping location** where O_2 cannot easily get 'through the tubes'. Older babies need to be safe if they explore the sleeping space when not noticed.

12.Theme: Safe settling

Babies need parents to help regulate systems and calm emotions. Familiar conditions to replicate include:

- Feeling firmly **held** (wrapping firm across baby's shoulders, not hips)
- Feeling **close** to parent (enough for sensing and touch through the drifting-off stage)
- Feeling **rhythm** (repetitive sounds or motions; eg sucking, swaying, dancing, walking, singing…)

Safe settling ensures oxygen can always get 'through the tubes'.

13.Theme: Managing exceptions

- Settling skills are important to safety. An unsettled baby is often the reason why parents act in unsafe ways. They may try on the tummy, bring their baby into their bed, settle on a couch, introduce a new practice, or put baby in a distant room.
- It is important to discuss options, and support for managing exceptions **before** they happen eg. What might happen if baby is unsettled after night feeds?

14.Theme: Enablers

Enablers make it easy to do what we know to be the right thing.

- NRT **enables** babies to be smoke-free in pregnancy
- Portable wahakura and pēpi-pods type sleeping spaces **enable safer** sleep for more vulnerable babies
- Talk cards **enable** difficult issues to be 'externalised' and discussed more objectively and visually.
- **We need to inform and enable.**

15: Theme: A for Ask a question to raise the topic

- The **ABC safe sleep tool**, explained in the next slides, supports 2mins conversations that are positive, focussed, supportive and brief.
- "A" means ASK everyone about safe sleep (about position, location, vulnerability)
  - Eg How much have you heard about where and how babies should and shouldn't sleep?
  - Eg Has anyone discussed with you why babies need a smoke-free place to grow?

16: Theme: B for Be clear

- B is for being clear about what is essential e.g. that oxygen needs to get 'through the tubes'.

Discussion topics may be about:

- **Position** - ensure 'face-up'; to respect baby's stage of development
- **Location** - ensure 'face clear', to protect from suffocation
- **Vulnerability** - promote the importance of antenatal checks, being smokefree, breastfeeding … to building resilience, safeguards and wellbeing into babies as they develop

17: Theme: C for Check support

- C is for **check support**. Check with 'what if' questions to assess support for safe action in **managing exceptions** (e.g. baby won't settle, no bed available, baby sick …)
- Check understanding, address concerns Eg Is there any occasion when
  - you might not sleep your baby face up (on the back)?
  - you might use a pillow near your baby?
  - Someone else cares for your baby and may not know the safe sleep information?
- Refer to; smokefree service; breastfeeding support; teen parent group; baby bed service; other

18: Theme: Scale the effort

- Most of us recognise this as Facebook. It represents connecting with others, sharing, being in touch, spreading the word …
- To magnify the impact of one conversation , we need to share responsibility for educating others with families.
- Consider that you have '**put it on Facebook**': Invite people to 'help spread the word' about 'through the tubes' to others in their networks

19: Theme: Tools

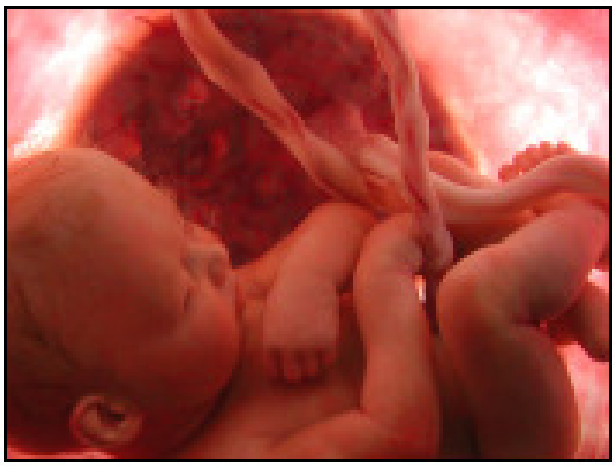
- A hammer is great for getting a nail embedded in a wall, but useless for driving in a screw.
- We too must choose tools carefully in our education work;
- A simple **plastic tube** may be just the tool to support a conversation about the need for oxygen to get 'through the tubes'.
- There are many tools and resources available to help shape discussions with families. Choose and use well.

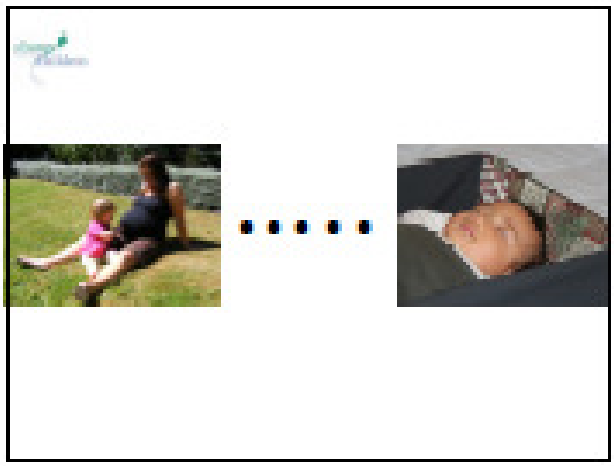
20: Theme: Destination Survival

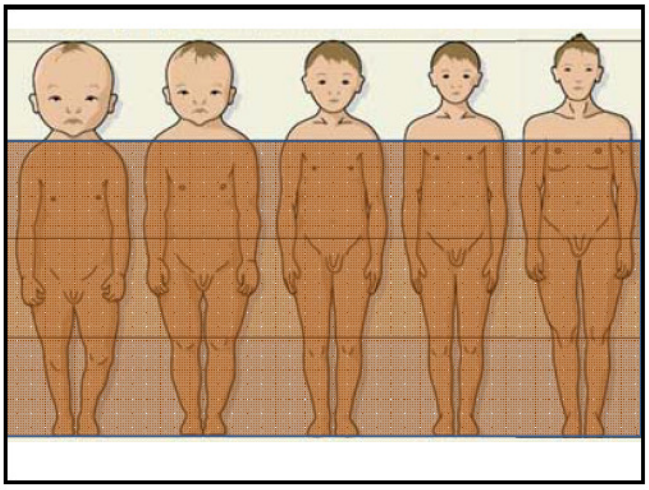
- This slide makes clear what the destination is for your 'through the tubes' prevention work.
- While most deaths are of younger babies, we need to be mindful of safety for older babies too.
- When oxygen can travel freely 'through the tubes,' both during pregnancy and after, more babies are likely to survive the vulnerable first year of life.
- Parents, whanau, and carers need your support to get them there.
- May this approach help.

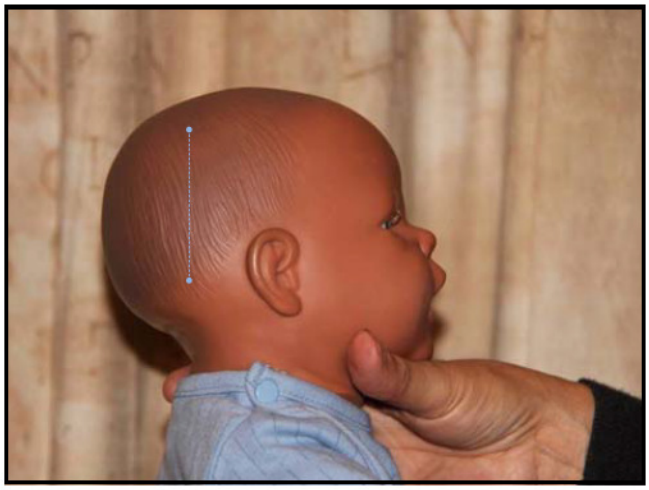
Thank you.

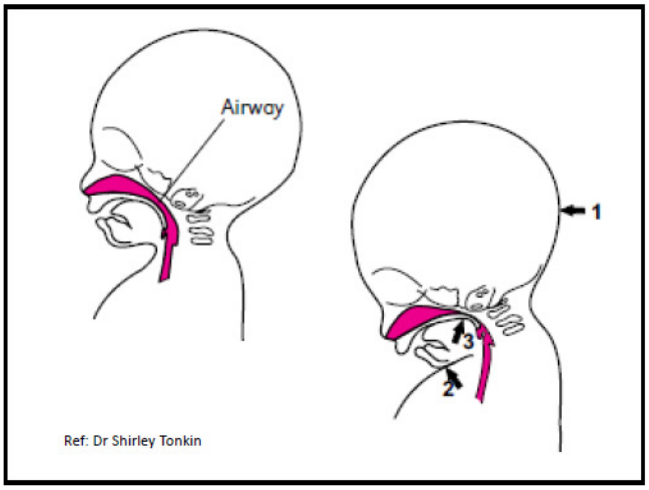
'Through the Tubes' Presentation Handouts

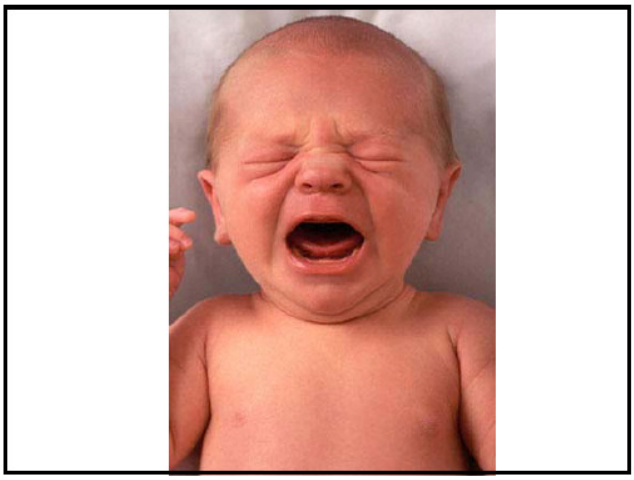









Airway
1
2
3
Ref: Dr Shirley Tonkin




in pregnancy
through the tubes
in sleep
Tubes that carry oxygen are life lines
How these tubes can fail
Ways to protect a baby's life lines ...


A
B
C

‘Through the tubes’ presentation with voice over

This is available for download to your system from:

http://www.changeforourchildren.co.nz/safe_start_programme/through_the_tubes/champions

Section 2: Brief intervention

Preparation for shaping discussions with families

INTRODUCTION

We have the knowledge to prevent death and disease for most children of the world. What we also need is a way to **turn that knowledge into protection**. As with previous work, we have designed this programme to harness the efforts of **a lot of people** in a **short time** to pursue protection for babies as they sleep. There needs to be shared leadership, broad participation and the application of clear principles in order to create lasting change. The actions below are about leading change through **leading conversations** that lead to enhanced protection for babies.

ACTIVITY

Principle: 'A little and often, by many over time' creates lasting change.

Purpose: To give practice in using resources to shape fresh discussions with families about principles of essential care. To allow colleagues to feel "2 minutes" and assess for themselves the value of the "brief intervention" (ABC).

Practice: Use the ABC framework to: **Ask** about position, location and/or vulnerability; **Be clear** that oxygen must be able to get 'through the tubes'; **Check** how to enhance safety. (see page 16 for the ABC Safe Sleep Discussion Guide)

Time: Allow 15 minutes all up, 5 minutes for each resource and 5 minutes discussion at the end. Work in pairs and allow 2 minutes practice for each person on each resource. Keep time.

Introduce activity: Open with: "We have a Talk Card and a strip of tubing as resources to help shape and focus a discussion with families about ensuring babies get the oxygen they need. Using what you have learned in the presentation and what you already know, let's see what we can achieve in two minutes. Work in pairs and I will set the clock."

Tools (Discussion prompts are on the Talk Card.)

- **Safe Sleep check**
  - Use the card to explain how babies are different from adults and why position is so important
  - Use the card to guide a safe sleep (or hazards) check and summarise the safe sleep principles
- **Through the tubes**
  - **Position:** Use the card to show the different ways that babies get their oxygen (in pregnancy and when sleeping). Explain the dangers of 'chin to chest' or curled positions once born.
  - **Location:** Use the card to explain how different sleep locations can create the same 'chin to chest' risk, and how risks change for the more mobile 'older' baby.
  - **Vulnerability:** Use the card to explain how smoking, especially in pregnancy, takes oxygen away from babies, why this puts babies at greater risk when they sleep, and how to help protect this baby (from greater vigilance about the safety of the sleep location).
- **The plastic tube**
  - Use the tube to show the 4 ways that oxygen can be blocked from reaching the lungs and (a covered face, pinched nose, chin to chest position of the neck or pressure on a small chest).

Close and Link: Restate the value of frequent, brief, focused discussions as a way to support families protect their babies from sudden unexpected death.

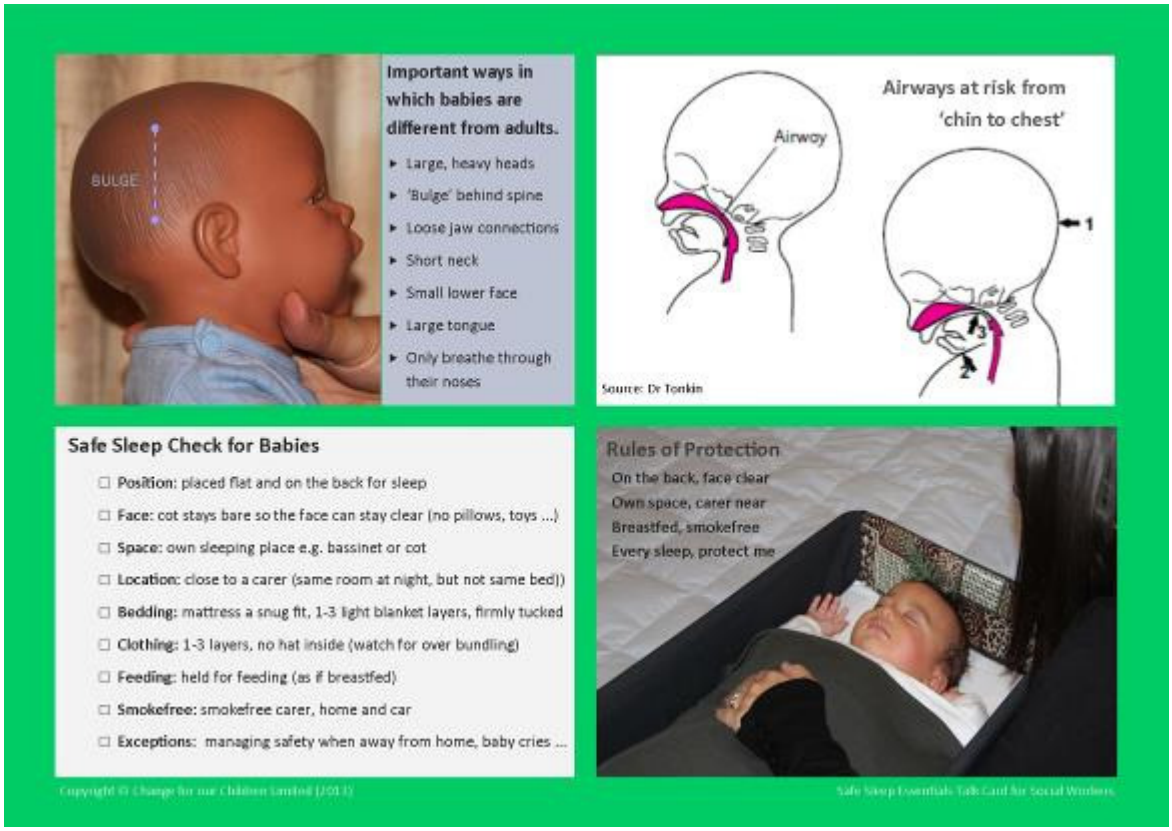
SAFE SLEEP ESSENTIALS TALK CARD

We have produced this Talk Card to help give shape and focus in your conversations about infant sleep safety with carers and families. It presents information to help with understanding as well as summarizing the safe sleep principles themselves. You are encouraged to find your own words to explain the cards so that each conversation can be personalised for individuals and related to their specific concerns, questions or situations.

The Talk Card can be downloaded and copied for personal and professional use from our website at www.changeforourchildren.co.nz. We regret that we are not able to supply in hard copy outside of training.

SIDE 1: SAFE SLEEP CHECK

'This side is to engage people in discussion about why babies are vulnerable and how to structure a safe sleep check and identify potential hazards that may interfere with breathing during the sleep episode.



SIDE 2: 'THROUGH THE TUBES'

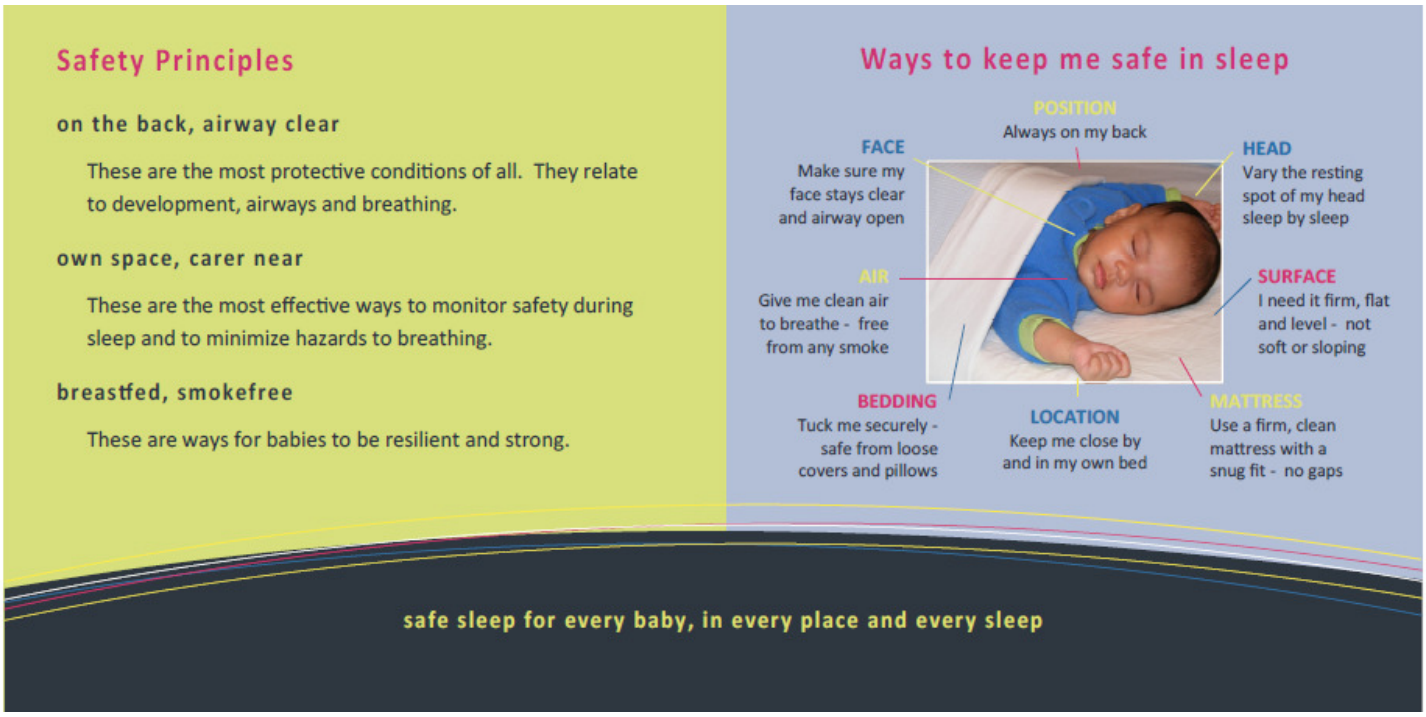
'This side is to engage people in discussion about protecting airways. It compares the different ways that babies get oxygen before and after birth and helps to 'join the dots' about how smoking in pregnancy puts babies at increased risk when asleep once born.

PLASTIC TUBE

The Talk Card comes with a plastic tube attached. The tube is for demonstrating the 4 ways in which oxygen can be prevented from getting 'through the tubes' and entering the lungs.

CD Booklet for Social workers

We have presented the key information that social workers need to know in a small booklet. This is to keep the work of promoting safe sleep in the Child, Youth and Family service clear and simple. Understand the triple risk model, be clear about safe sleep principles that derive from evidence and be skilled at assessing the safety of a baby's sleeping environment.



ABC Safe Sleep Discussion Guide

The information below offers a format for having a brief discussion about safe infant sleep. The change principle is: a little and often by many over time. It is the 'by many' that is the power of brief interventions. The table supports a range of 2 minute conversations that can be positive, focussed, supportive and brief.

- **Ask**: everyone about safe sleep conditions (position, place, vulnerability factors).
- **Be clear**: about what is essential. Oxygen must be able to get "through the tubes".
- **Check**: safety, support, understanding, plans, unusual 'what if situations… reinforce safe practice and address any concerns. Refer as appropriate, to support safe action.

Examples of "through the tubes" brief interventions

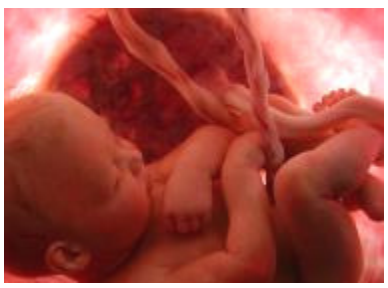
- In pregnancy

Ask	*What support have you had to keep your baby smokefree?*
Be clear	Be clear that smokefree is **essential** care, both during pregnancy and after. *Smoking takes oxygen away from your baby. Babies need oxygen to grow and stay alive..*
Check	Check expectations and offer referral for smokefree support. *Are/were you smokefree (in pregnancy)? Family smokefree? Home smokefree? If you were smokefree, how would things be different? Would you like support?*

- During sleep

Ask	*What are you hearing is the best position for babies to sleep in?*
Be clear	Be clear that sleeping face-up is **essential** care, every place, every sleep. '*On the back' is essential protection from getting into positions that can cut off airways*
Check	Check understanding and address concerns. Is there any occasion when you might not sleep your baby face-up (on the back)?
Ask	*How much do people talk with you about protecting a baby's face?*
Be clear	Be clear that a clear face and head is **essential** care, in every sleep. *A clear face and head helps a baby breathe freely and protects from suffocation.*
Check	Check confidence with identifying hazard situations *How confident are you about doing a 'hazards check' of where your baby sleeps?*
Ask	*How much have you heard about where babies should and shouldn't sleep?*
Be clear	Be clear that 'close to a parent' is **essential** care, day and night, and every sleep. *The safest place for your baby to sleep is close by you and in their own safe space.*
Check	Check understanding and address concerns. *When might your baby sleep in another room or a place not designed for babies?*

Different ways that babies get their oxygen

In pregnancy   In sleep

Section 3: To support discussions

Protecting the older baby

Condition of development

Sudden infant death is a condition of development. Young babies (<5 months) are especially sensitive to how they are positioned when they sleep. As their breathing develops and their jaw joint forms, positioning risks lessen. However these positioning risks do not completely go away.

Increasing mobility

An older baby is more able to change position and this developmental progress, in terms of increased mobility, presents the older baby with a different form of positioning risk. By their own movements, they may get into asphyxia-generating situations due to getting underneath loose or bulky bedding or, in an effort to free themselves, become tangled in coverings. This can lead to overheating, airway obstruction, or accidental suffocation.

Simultaneous and co-existing risks

Tummy sleeping interacts with other risks. As does smoking. For example, it is more dangerous for babies who become prone, or babies who are smoke-exposed, if they also are exposed to covers over the head, being unwell, wintertime, a soft sleeping surface, sleeping in another room, are swaddled or overwrapped. A vulnerable baby may be older when they meet their first asphyxia challenge and have multiple risks to contend with all at once.

CYMRC Report

An update on the profile of sudden infant deaths can be found in the Fifth Report of the Child and Youth Mortality Review Committee to the Minister of Health. This document reports on SUDI mortality in New Zealand for 359 babies who died in the five years between 2003 and 2007. The report can be downloaded from: http://www.hqsc.govt.nz/assets/CYMRC/Publications/cymrc-5th-report-chp1-sudi.pdf.

Peak age of death

Eighty per cent of SUDI deaths in this period were of babies aged less than five months with 40% of babies aged between 1 and 3 months. This peak age is *younger than in the past*, and prevention in recent years has focused, quite appropriately on protecting the younger baby. Yet 20% of babies were older than 5 months and accounted for an average of 13-15 babies per year.

What this means for education

We need to be vigilant, in our education, about protection for the older baby. We need to apply safe sleep principles to babies **under one year** and not just under 6 months. One quarter of sudden infant deaths are of babies found with their heads under bedclothes (a 17 fold increase in risk over having a clear face). Equally concerning is the evidence for a 10 fold increase in risk if babies sleep in rooms separate from sleeping parents. There is an interaction between these two risks, with babies in separate rooms more likely to be found with covers over their heads.

Development must not be restrained. Babies will move. Parents need to make the sleeping place safe for their older babies. No pillows, infant sleeping bags instead of bedding, or lightweight and firmly tucked bedding may help. While every effort must be made to protect older babies from asphyxia risks such as getting tangled in or underneath bedding, the evidence suggests that babies sleeping in the same room as parents for their first year of life has the best chance of alerting a parent in time should this happen.

SETTLING SKILLS

An unsettled baby can lead carers to take risks. SUDI research has identified that 'first time' situations or arrangements that were 'unusual that night' are significantly associated with increased risk. As well, coroners' reports often describe situations where an unsettled baby led parents to ignore safety advice and place their baby on the tummy, prop them on pillows or bring them into their bed. For these reasons, we have built 'settling skills' into our SUDI prevention education, from our experience with babies using ***pēpi-pod***® sleep spaces.

A first principles approach

Babies are easily influenced by the states within and around them. They have under-developed capacities for emotional regulation and need their parents and caregivers to help them 'wind down' or calm when distressed. As they progress from 'quietly alert' (wide-eyed and still), to 'actively alert' (wide-eyed and wriggly) they meet a fork and can go in one of two directions: towards 'fussing and crying', or towards 'drowsy and sleepy'.

Calming a distressed baby

The parenting skill to encourage is noticing when a baby is 'actively alert' and then responding quickly to the first signs of a change, **before** a baby needs to fuss and cry. The **proactive** response may be feeding, holding or preparing for sleep. Once the 'big feelings' are being expressed, a baby's regulatory processes are flooded, overwhelmed, out of control. The **reactive** parenting skill needed now is to act like a **safe haven**, close and connected through a baby's time of distress, until there is calm again.

Conditions that settle babies

Babies often fall off to sleep at the breast. Here, all the conditions that support settling happen at once: a full tummy, the rhythm of sucking, the warmth of being held and the closeness to a parent's noises, and smells. Parents can achieve these conditions in a variety of ways. Assuming a baby has a full tummy, three conditions that help babies calm and settle at bedtime, are:

- **Feeling held**: Babies feel safe and calm when being held and can fuss and cry when put down. The firmness of the hold needs to be felt around the shoulders (rather like a hug) such that it contains the arms and a baby can feel that someone is in charge. In bed, feeling held for a baby can come from firm swaddling or firmly tucked sheets and bedding. These can replace the warm hold of a parent's arms when it is time to go to sleep.
- **Feeling close**: Closeness means a baby is able to hear, see, smell or in some way sense that a parent is near. Babies feel safe when close to a parent. Parents can respond early to their babies' signs and babies can come to trust that their needs will be met. Trust engenders calm. Babies must first be dependent, before they can be independent. When young, they need a parent to help them regulate emotions and trust enough to fall asleep.
- **Feeling rhythm**: Babies feel safe with rhythmic noise or movement such as sucking, rocking, swaying, singing, breathing, music, counting. They are calmed by the predictability, the repetition, the trust in what is coming next. This helps with regulation and emotional balance. In time babies learn to play a bigger role in regulating themselves, but 'big feelings' will overwhelm then from time to time and rhythm can be part of a carer's skill set for calming their babies.

Topic Page

You may be drawn into conversations about a range of topics and practices. Most questions can be answered be referring to safe sleep principles. To assess the safety of products and practices:

- Ask 'How will this product or practice support or undermine the safety principles of …'
  - Face-up: *Lying flat, level and on the back*
  - Face clear: *Ensuring the airway stays open and baby can keep breathing*
  - Smokefree: *Building resilience (also breastfed, connected to a GP / WellChild service)*

The following topics will be discussed in the Safe Sleep champion training

TOPIC	NOTES
Amber necklaces	Potential suffocation and strangulation risk. Not for use when sleeping
Baby beds	Devices designed as a regular place of sleep for babies e.g. cots, bassinet
Baby carriers	Must ensure a straight spine, held high on the chest, with the face clear
Bedding	Be alert to over-bundling, heavy covers, excessive layers, 'hot' materials
Breastfeeding	Protective. For CYFS carers, hold to feed (as if at the breast)
Car seats	Designed for travel and not as a usual place of sleep. Babies can slump
Clothing	Be alert to excessive layers, long and loose ties, poor fit with baby's size
Comforters	Discourage the use of all soft, loose and unnecessary items in the cot
Co-sleeping	Babies must always sleep, close to carers, but in their own baby bed
Dummies	Dummies are protective, so should not be discouraged
Flat heads	Managed with 'tummy time' ('back for sleep, front for play, upright for cuddles')
Furniture standards	See http://www.changeforourchildren.co.nz/files/docs/product%20safety.pdf
Hats	Not advised for sleeping babies unless the air is extremely cold. Can cover face
Pillows	Dangerous. Can push head forward and / or be a suffocation risk
Port-a-cots	Not recommended as a regular sleeping place for babies
Positioning devices	Not recommended or necessary. Heavy heads are sufficient
Sharing beds	Risks increase when babies share beds, or sleep surfaces, directly with others
Sharing rooms	Getting under covers (and death) are less likely when babies sleep near carers
Sleep association products	Not necessary. Be alert to breathing hazards from soft, or loose items
Sleep bags	Can be an alternative to firmly tucked bedding, for the older baby
Sleep spaces	Portable sleep spaces are emerging to protect babies when not in cots
Smokefree	Protective. Smoking is the main cause of preventable death and disease
Swaddling	Firm around the shoulders, loose around the hips and clear of the face
Toys	Keep the cot bare so that airways can stay clear

OTHER RESOURCES

THE BABY ESSENTIALS TOOLKIT

The Baby Essentials education package of essential understandings for protecting a baby's life is one of our foundation blocks for building on SUDI knowledge. The education package / toolkit can be found online at:

http://www.changeforourchildren.co.nz/safe_start_programme/tool_kit

Here you will find a variety of resources to support learning. The 15 minute Baby Essentials online presentation can also be found at:

http://www.changeforourchildren.co.nz/safe_start_programme/baby_essentials_online

It is hoped that all health professionals and Child, Youth and Family service staff will have this basic understanding before moving on to the more focussed approach of the "Through the tubes" education package.

ISSUES FORUM

We have a Safe Start Issues Forum on our website:

http://www.changeforourchildren.co.nz/safe_start_programme/issues_forum

This is where we address issues raised in training sessions or that come to us in various ways. This can be a resource for you in delivering your sessions and a place to direct people with questions.

SAFE SLEEP STAR[EM]

We also have an area of our website dedicated to the manufacturing and retail world. We have developed an Education Mark, represented by a safe sleep star symbol for placement on products as a reminder of safe sleep principles at 'point of sale' and point of use'. This work is developing and to understand more about how to answer questions about product safety and suitability for babies visit

www.safesleepstar.co.nz

It is another place where you may find support.

PĒPI-POD® PROGRAMME

Several DHBs are now providing infant sleep spaces as part of their broader Safe Sleep strategy for protecting those more vulnerable babies in their regions. Such services are not available generally and so we have not included information about these portable sleeping spaces (PSSs) in this education. However, if you would like to be informed about the programme or be able to direct people to information then here is the link:

www.pepi-pod.co.nz.

Section 4: System Support

Templates for embedding SUDI prevention practices into service standard

INFORMATION FOR MANAGERS

Thank you

Thank you for participating in the "Safe Sleep" programme. In accepting the invitation to participate, you have declared your commitment to improving the health and survival of children. This is a key step in ensuring success with implementation in your environment.

Coroners

SUDI is the main cause of preventable death of children in the first year of life, after the neonatal period. It takes its place with drowning and suicide as a major concern for protecting our young. New Zealand coroners have taken a particular and high profile interest in SUDI and are asking questions of professionals, services and organisations involved with families when a baby dies. They are asking for what has been discussed with families, what has been recorded, what resources have been shared, what advice given. They are wanting to prevent these deaths, too.

Creating a supportive environment

The nominated Safe Sleep Coordinator from your organisation or service has been prepared to deliver this programme to peers. That person will look to their manager for systems support. This section of the "Facilitators Guide" offers support to managers, in the form of systems templates to guide the change process.

Managers provide the supportive environment within which effective change strategies happen. Like banks on a river, systems direct action from the evidence to the child. They support the flow from knowing to doing to change. Systems to support an effective Safe Sleep intervention may vary with organizations and Change for our Children expects to support where we can. This resource is a start and contains:

- A "Safe Sleep" standard for self-assessment of your service and "Current Issues" and "Work Action Plan" templates to focus planning
- A sample checklist for developing a "Through the Tubes" staff education plan
- Resources (a talk card and plastic tube) to support implementation
- Administrative support for Safe Sleep Champions leading the programme in your setting

Safe Sleep Champions

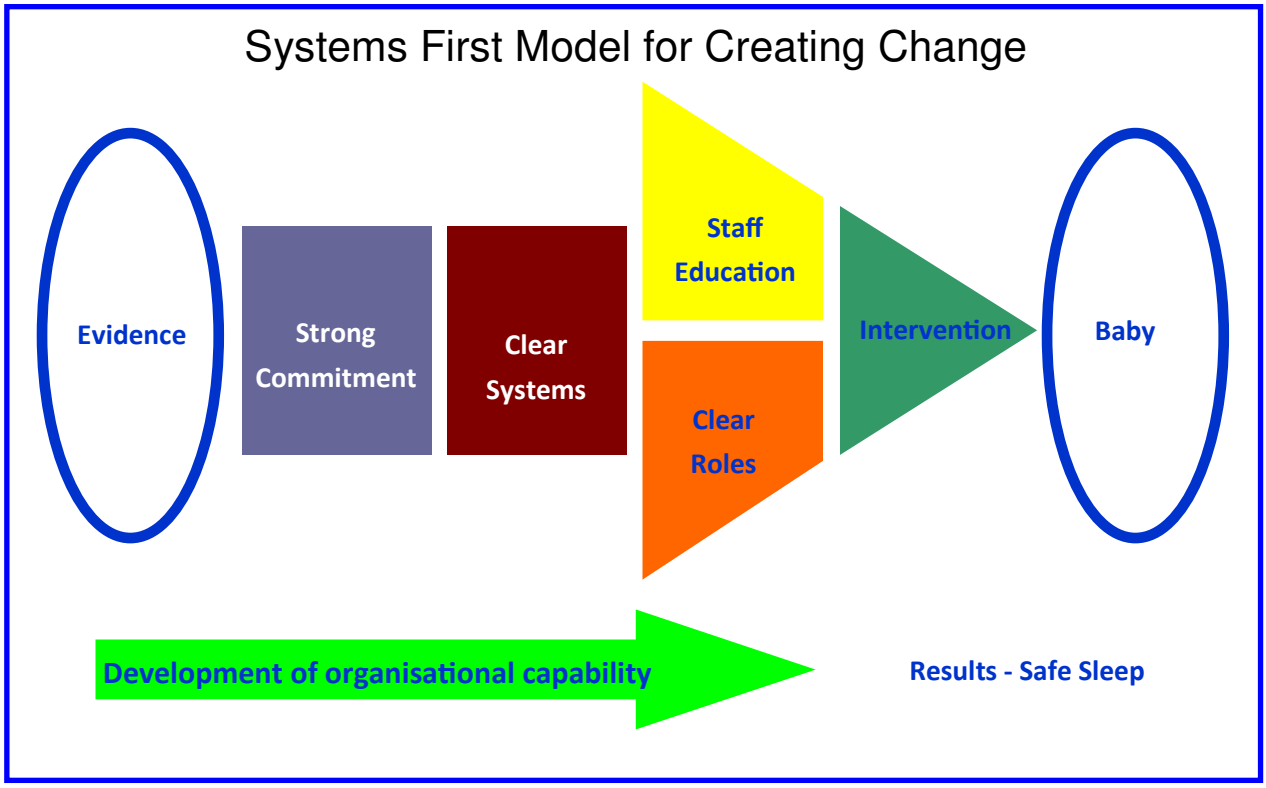
Some district health boards have formalised the Safe Sleep Champion role and we are hoping that all organizations working for the health and wellbeing of children follow this lead. We at Change for our Children will support you and your champion with implementation.

Continuing support

The person you put forward for this role will be part of a national network of peer educators/safe sleep champions working to implement the programme throughout New Zealand. This network will be linked by a regular email communiqué, brief information updates and access to web-based resources. We would ask that this role and resource kit be passed to another senior staffer should there be a change in circumstance for the current person. Thank you for supporting this programme.

MODEL FOR CREATING CHANGE

Our preventive actions need to be highly geared if we are to influence a change in SUDI statistics. They also need to be coordinated, monitored and measured. Sitting firmly behind discussions with families and carers there needs to be a strong commitment from the organization, clear systems to embed education into practice, clear expectations and defined roles. These things build the capability of the organization, education builds the capability of the staff and effective discussions build the capability of families.



INFLUENCE REQUIRES

Strong commitment Statement of organizational commitment to preventing SUDI

Clear Systems
- For providing Safe Sleep Education
- For identifying safe sleep practices of families
- For monitoring change in practice (workers and families)

Staff education 'Through the Tubes' presented to all

Clear roles A nominated Safe Sleep Champion for each region

Safe Sleep Discussions Happening as standard for **every** family

SERVICE STANDARD

A Safe Sleep service standard is offered as a way to support a coordinated approach to protecting infant life that tracks policy and systems development and provides accountability to funders and managers for the investment made.

SAFE SLEEP SERVICE STANDARD

Promoting safe sleep for children is an "important but not urgent" activity for most services. It is preventive care. It competes for staff attention and time with "urgent and important" activities such as very ill children and families in crisis. There may be individuals in a programme team who have built SUDI prevention activity into their day to day practice. However, reliance on champions such as these means that only some children and families are included in support. When interventions become standard for all, the principle of equity is respected.

For all these reasons, a systematic approach is needed if safe sleep action is to take its place in a baby's total care and enable all families to benefit. Systems support staff to know what is expected. They provide prompts and make intervention simple, brief and more likely. Systems define the standard. The standard below, is a tool for assessing organizational capability to provide an accountable intervention. It is a simple checklist of "essentials" for a systematic approach to promoting safe sleep for babies. It may serve as a self-assessment tool, basis for planning and a way to mark quality improvements.

How well does your service provide a supportive environment for protecting babies from sudden infant death?

Service:

Information provided by: **Date:**

STEP 1 Commitment

This service has a written statement of commitment to preventing SUDI which includes … (attach any relevant documents)

	Y/N	Rating	Comments
► safe sleep assessments expected for **every** baby/family			
► safe sleep education to be provided for **all** staff			
► referral to support services as appropriate. e.g. smoking cessation / baby bed services			
STEP 1 Total	**/3**	**/15**	

STEP 2 Systems

The service has systems for …

	Y/N	Rating	Comments
► **staff education** – involving and updating all current and new staff			
► **screening** – recording safe infant sleep practices of all CYF carers / families			
► **intervening** – discussing safe sleep issues with carers and families			
► **monitoring** these systems and providing feedback to staff			
STEP 2 Total	**/4**	**/20**	

STEP 3 Education

The service has a documented plan that ensures all staff receive ongoing safe sleep education including…

	Y/N	Rating	Comments
► evidence for what is protective and why			
► evidence of what increases risk and why			
► attitudes that can support/block the uptake of safety information			
► practice in assessment, planning and discussion skills			
► knowledge of roles, responsibilities, expectations and standards			
STEP 3 Total	**/5**	**/25**	

STEP 4 Roles

	Y/N	Rating	Comments
► champion assigned to champion safe sleep initiatives			
► responsibilities defined for every staff member			
► standard interventions achieved at risk-specific times (e.g. placement, 3 and 6 mths)			
► referral programmes accessed (as relevant)			
STEP 4 Total	**/4**	**/20**	

STEP 5 Intervention

	Y/N	Rating	Comments
► ask about safe sleep related practices to raise the issue			
► be clear about what is essential care			
► check understanding, address concerns, plan for safety			
► guide a safe sleep check to enable every carer of a baby < 12 months to do the same			
STEP 5 Total	**/4**	**/20**	

OVERALL TOTALS	**Y/N**	**Rating**
Actual		
Possible	20	100

Guidance Notes

Ratings:
5 Full
4 Substantial
3 Moderate
2 Limited
1 Minimal

Notes:
This assessment is designed to:
provide an overall assessment of *status quo*
highlight achievements
identify current issues and challenges
Y/N rating indicates **fully** present or not
Numerical rating indicates level of achievement as shown at left
Comments exemplify ratings and provide detail of history, achievements, etc

SAFE SLEEP – CURRENT ISSUES

Service:	**As at:** << date >>

This list of key current issues draws on the information gathered during the service's Safe Sleep Service Standard self assessment. It is designed to provide a one-page summary of significant issues that require focused attention and action in order to more fully provide a supportive environment for protecting babies from sudden unexpected death in infancy (SUDI).

ISSUE 1 -

ISSUE 2 -

ISSUE 3 -

ISSUE 4 -

ISSUE 5 -

SAFE SLEEP – WORK ACTION PLAN

Service: **As at:** << date >>

GOAL: To provide a supportive environment for protecting babies from sudden unexpected death in infancy (SUDI)

Targets (Goal statements, top priorities assigned)	**Actions** (Tasks, persons responsible, timelines, tick when complete)

Commitment/Policy

ISSUE -	***Priority***
☐	
☐	

Systems

ISSUE -	***Priority***
☐	
☐	

Education

ISSUE -	***Priority***
☐	
☐	

Role Clarity

ISSUE -	***Priority***
☐	
☐	

Intervention

ISSUE -	***Priority***
☐	
☐	

EDUCATION PLAN

A guide to support health professionals plan for the systematic use of the "Safe Sleep Essentials" education programme. Please complete as appropriate. Thank you

What is it for? Why are we using this? What do we expect it to achieve?

Describe this programme's place in your overall staff education strategy

Who will participate in this programme?

☐ All staff

☐ Some staff

☐ Staff working in allied programmes
☐ non-clinical (management /administration /support staff)

Comment:

When & where will this programme be used?

☐ As a stand alone presentation
☐ Within a dedicated staff development day
☐ At ward/new staff orientation sessions
☐ In a time designated by Team Leader
☐ Other:
……..

Comment:

How will people participate in the programme?

☐ Through a facilitator (data show or OHP)
☐ Small group (<10 people)
☐ Large group (10 or more people)

☐ Scheduled participation
☐ Choose from a schedule of times slots
☐ Other:

☐ Duration of session
☐ 30 minute single session
☐ two 15 minute sessions (Information/skills)
☐ 60 minute single session
☐ Other

Comment:

What are our expectations of participants of this programme?

☐ Ask families about safe sleep plans and practices for their babies (raise the issue)
☐ Be clear about what is best for babies and why
☐ Carry out a safe sleep check with every family of a baby (expected or born)
☐ Record safe sleep status of every child at nominated time intervals
☐ Discuss safe sleep protection for the child, with parents of every child
☐ Other:

Comment:

How will we communicate expectations for involving staff in this programme?

☐ At meetings
☐ By memo
☐ Other:

Comment:

How will we know about participation in the programme? What is/are our performance target(s)?

☐ ____ % of staff participated in the programme within ____ weeks
☐ ____ staff participated in the programme by __/__/____
☐ ____ total presentations delivered by __/__/____
☐ Other: ……..

Comment:

How will we know the programme has been useful?

☐ Increased documentation of safe sleep positioning intention/actions at enrolment and/or intervals
☐ Increased documentation of safe sleep discussions
☐ Increased referral to smokefree support
☐ Positive experience in discussing safe sleep issues reported by surveyed staff and families
☐ Other: ……..

Comment:

How will we monitor the implementation process of the programme?

☐ Regular reports against an implementation schedule for each organisation/area
☐ Other: ……..

Comment:

How will we report on the implementation of the "Through the Tubes" programme?

☐ Session reports by facilitators giving names of attendees, appraisal of the session, issues raised
☐ One page collective report to document purpose, participation outcomes, other outcomes, issues
☐ One page audit report to document periodic audits of caseworker family notes
☐ Other:

☐ Presented to Manager by __/__/____

☐ Presented to Change for our Children by __/__/____

Comment:

Any other key comments

Comment:

Contact Person(s)

Name: ……..

Phone: ……

Designation: ……

Email: ……

OPTIONS FOR EDUCATION SESSIONS

Option 1: Fifteen minute session

The 15 minute option involves presenting the two parts of the programme separately and taking 15 minutes for each part. It may suit smaller hospitals or organisations who cannot release several people at once for education.

Individual coaching

The resources for shaping safe sleep discussions could be introduced to individual colleagues (or groups of 2 or 3) who have previously been through the "through the tubes" slide presentation. They would be coached by the Safe Sleep Champion in how to use resources with families.

New Staff Induction

Once all staff have been through the programme it can be built in to new staff induction.

Option 2: Thirty minute session

Facilitated session

This is the recommended option. It is the one for which the programme has been designed and is likely to have the best outcome. The two part programme, (information update and brief intervention practice), would be presented together by the peer educator (Safe Sleep Champion) who has been prepared for this by Change for our Children. It would involve groups of about 10 participating in the programme. A punchy delivery of the information and focused skill practice are important if the session is to keep to time. Practice with using materials helps with confidence.

Follow-up session

The 30 minute session could be built into a six-monthly or annual rotation and offered more than once. There is educative value in repetition and as people become more confident having safe sleep discussions with families, they may glean more from subsequent sessions.

Option 3: One hour session

Facilitated session

There is scope for both parts of the programme to be presented in a more comprehensive way with more time for discussion. This would be suitable in workplaces where there was strong support for safe sleep interventions and where staff release was well supported.

Option 4: Integrated session

The programme could be integrated into a study day about an associated issue e.g. NICU/SCBU newborn care, smokefree, breastfeeding, Maori or Pacific health, family violence …

Baby Essentials Online

Staff can be encouraged to complete this complementary 'bare essentials' programme. This is a foundation programme for those new to the issue. It is a certificated programme available at:

http://ww2.changeforourchildren.co.nz/

SCREENING AND AUDIT

Every service will have its own processes for recording and auditing family and carer information. Below is an easily audited checklist of a standard safe sleep intervention **"ask, be clear, check"** that is simple and practical. It records the safety status of the baby, the action taken by the service team and the action planned by the family. It could be included on the admission page or discharge page of notes or in the file information of the service.

For Audit	**Baby's safety status and family/carer action plan**
☐ **Ask**	About smokefree status of baby: Smokefree in pregnancy y / n Smokefree at home y / n About sleep intentions/practices: Position: face-up y / n Place: own 'baby bed' y / n
☐ **Be clear**	Status smokefree? (Yes if household, home and pregnancy all smokefree) ☐**yes** ☐no ☐? Be clear about what is essential e.g. that oxygen needs to get 'through the tubes'.
☐ **Discuss**	"Safe Sleep" plan: on ___/___/_____ Family action decided: _____ Follow-up arranged with: ☐GP ☐Quitline ☐Hospital: ___/___/_____

Section 5: Administration

PEER EDUCATOR ROLE DESCRIPTION - Expectations

Your role in this programme is as a safe sleep champion. You are expected to:

☐ Deliver the "Safe Sleep Essentials" presentation to as many colleagues and others as possible (minimum 20).

☐ Report on the first 5 sessions to Change for our Children and include the list of participants for each session. (Reporting not required for subsequent sessions.)

These requirements are an expectation of our contract and will be included in our service reports to the Ministry.

We also expect that you:

☐ Prepare a colleague to take over your role and this resource kit should you leave

You may also find it useful to:

☐ Discuss the programme with your manager

☐ With your manager, carry out a Safe Sleep Service Standard assessment

☐ Develop a plan for the "**Safe Sleep Essentials**" education sessions, with your manager

☐ Liaise with relevant others in your setting for systems support as needed

☐ Be an advocate for safe sleep in your work setting

☐ Participate in the "Transform" email network

Before a session

☐ Arrange dates, times, venues with sufficient notice to colleagues

☐ Check the availability of a data projector /computer

☐ Prepare the flier and promote the session to colleagues

☐ Prepare your materials

- ☐ Down-load the "Safe Sleep Essentials" presentation file from http://www.changeforourchildren.co.nz/safe_start_programme/
- ☐ Ensure you have enough practice resources (Talk cards and tubes)
- ☐ Ensure you have enough Participant Evaluation forms
- ☐ Ensure you keep a record of the session on the Activity Report

☐ The day before the session, go over materials to refresh yourself

At the session

☐ Prepare your setting (seating, lighting, fresh air, safety)

☐ Welcome your colleagues

☐ Deliver your session according to the guidelines in this resource kit

☐ Collect *Participant Attendance* list

Immediately after a session

☐ Collect Participant Evaluation Forms

☐ Complete your Session Report (there and then is best or as soon as possible)

☐ Check that you have your manager's signature as verification

☐ Place in the stamped addressed envelope

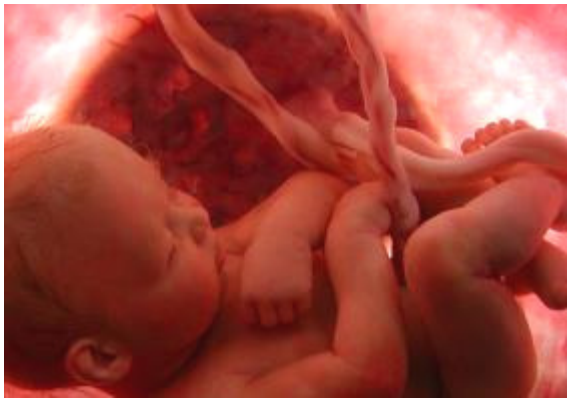
☐ Send to Change for our Children, PO Box 36406, Christchurch 8146, within 7 days of session

We thank you for your accountability.

Safe Start is a programme of Change for our Children that is funded by the Ministry of Health. It is peer education designed to align a nation in its efforts to prevent sudden infant death and promote safety during sleep.

"Safe Sleep Essentials"

Protecting children is everyone's business



You are invited to join your colleagues
for a presentation on

Promoting oxygen sufficiency for babies in pregnancy and in sleep

Date	
Time	From: to:
Venue	
Presenter	
For more information	

Attendance List

For circulating at a session and recording evidence of participation

Presenter: _____ Organisation: _____ Date: ___/___/_____

List of Participants Please identify your professional group: (midwife, nurse, whanau worker, ...)	**Role**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Summary: Social Worker _____ Carer _____ Manager _____ Other _____	

Participant Evaluation

"Safe Sleep Essentials"

We invite your feedback on this session. A summary of feedback from across the country will be included in our service report to the Ministry of Health. Thank you.

1. **How would you rate the overall value of this session to you?** (on a scale of 1 to 9)

(low value) 1 2 3 4 5 6 7 8 9 (high value)

2. **How confident do you now feel to discuss safe sleep for babies with families, carers and others in your circle of influence?**

(no more confident) 1 2 3 4 5 6 7 8 9 (much more confident)

3. What words describe your experience of this education?

Participant Evaluation

"Safe Sleep Essentials"

We invite your feedback on this session. A summary of feedback from across the country will be included in our service report to the Ministry of Health. Thank you.

1. **How would you rate the overall value of this session to you?** (on a scale of 1 to 9)

(low value) 1 2 3 4 5 6 7 8 9 (high value)

2. **How confident do you now feel to discuss safe sleep for babies with families, carers and others in your circle of influence?**

(no more confident) 1 2 3 4 5 6 7 8 9 (much more confident)

3. What words describe your experience of this education?

"Safe Sleep Essentials" Activity Report

To be completed by Safe Sleep Champions

The *Safe Start* programme is partly funded by the Ministry of Health. For reporting reasons, Change for our Children asks that those participating in passing on this education, complete this form and email or send it to:

Change for our Children Ltd, PO Box 36 406, Christchurch 8146.

To monitor participation by the various professional groups, please indicate the roles of participants. In this way we are all accountable for the resources allocated to this programme.

Thank you

Session details	
Name of Presenter **:**	Session Date **:**
Organisation :	Session Length : minutes
City/Town **:**	DHB
No. Attending (list names below)**:**	No. of evaluation forms attached **:**

Presenter's Evaluation
Issues raised **:**
Signed (Presenter): Signed (Manager):

List of Participants	**Role**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Summary: Social Worker _____ Carer _____ Manager _____ Other _____	

NB: Please attach participants' evaluation forms

Section 6: Research Updates, Articles and Abstracts...

1 Letter from the Health Quality & Safety Commission New Zealand regarding safe sleep policies and SUDI Prevention. June 2012

2 Perinatal and Maternal Mortality Review Committee: Third Report to the Minister of Health: July 2008 to June 2009 Available at: http://www.hqsc.govt.nz/assets/PMMRC/Publications/Third-PMMRC-report-2008-09.pdf

3 Child and Youth Mortality Review Committee (CYMRC) SUDI Recommendations Available at: http://www.hqsc.govt.nz/assets/CYMRC/Publications/cymrc-5th-report-chp1-sudi.pdf

4 Trachtenberg F L , Haas, E A, Kinney, H C, Stanley C, Krous, H. Risk Factor Changes for Sudden infant Death Syndrome after initiation of back to sleep campaign. *Pediatrics*, 2012, March; DOI: 101542/peds.2011-1419

5 Cowan S. Creating change: how knowledge translates into action for protecting babies from sudden infant death *Current Pediatric Reviews 2010; 6: 86-94*

6 Task force on sudden infant death syndrome. SIDS and other sleep related infant deaths: Expansion of recommendations for a safe sleeping environments. *Pediatrics*; originally published online October 17, 2011; DOI; 10.10.1542/peds.2011-2284.

7 Ball H L, ' Volpe L E. Sudden Infant Death Syndrome (SIDS) risk reduction and infant sleep location – Moving the discussion forward *Social Science & Medicine* Available online 21 April 2012.

8 Moon R Y ,Horne R S C, Hauck F R, Sudden infant death syndrome *The Lancet* Volume 370, Issue 9598, 3–9 November 2007, Pages 1578–1587

9 Tipene-Leach, D, Abel S. The wahakura and the safe sleeping environment. *Pounamu J of Primary Health Care*. 2010. 2; 81.

10 Vennemann MM, Hense HW, Bajanowski T, *et al*. Bed Sharing and the Risk of Sudden Infant Death Syndrome: Can We Resolve the Debate? *J Pediatr* 2012; 160: 44-48

11 Kemp JS, Unger B, Wilkins D *et al*. Unsafe sleep practices and an analysis of bedsharing among infants dying suddenly and unexpectedly: results of a four-year, population-based, death-scene investigation study of sudden infant death syndrome and related deaths. *Pediatrics* 2000; 106: E41

12 Gettler L T, McKenna J J. Never Sleep With Baby? Or Keep Me Close But Keep Me Safe: Eliminating Inappropriate “Safe Infant Sleep” Rhetoric in the United States. *Current Pediatric Reviews 2010; 6: 71-77*

13 Mitchell E A, Freemantle J, Young J, Byard R W. POSITION PAPER, Scientific consensus forum to review the evidence underpinning the recommendations of the Australian SIDS and Kids Safe Sleeping Health Promotion Programme – October 2010 *Journal of Paediatrics and Child Health* doi:10.1111/j.1440-1754.2011.02215.x

14 Cowan S, SUDI prevention logic - A ‘whole of community approach’ to protecting infant life and promoting resilience, especially in more vulnerable infants. *Change for our Children* 2012.

HEALTH QUALITY & SAFETY COMMISSION NEW ZEALAND
Kupu Taurangi Hauora o Aotearoa

PO Box 25496
Wellington 6146
New Zealand

T: +64 4 901 6040
F: +64 4 901 6079
E: info@hqsc.govt.nz
W: www.hqsc.govt.nz

20 June 2012

Dear Johr

Re: Safe sleep policies and SUDI prevention

The Health Quality & Safety Commission (the Commission) would like to encourage all District Health Boards (DHBs) to prioritise the prevention of Sudden Unexpected Death in Infancy (SUDI).

Sixty infants die of SUDI each year in New Zealand. Among industrialised nations, New Zealand has the highest rate of death from SUDI with 1.1 deaths per 1000 live births. The rate for Māori is 2.3 deaths per 1000 live births, nearly four and a half times higher than the rate for infants of "other" ethnicity. Many of these SUDI deaths are preventable.

A significant portion of SUDI deaths result from suffocation in the place of sleep. Ensuring that *every sleep is a safe sleep* for infants both in and out of hospital, along with a continuing reduction in maternal smoking, can lead to a reduction in SUDI.

Some DHBs already have a safe infant sleeping policy[37], which aims to ensure:

- staff who support families caring for infants receive mandatory training and updates about prevention of SUDI and ways of communicating risks to families
- the modelling of safe sleeping practices for **all infants**[38] within DHB facilities
- safe sleeping arrangements are available for all infants after they are discharged home
- families are provided with education and supports tailored to their level of need about the hazards that arise in some sleeping situations
- advice on safe strategies for night feeds and settling of infants is provided to parents.

If you have not already done so, we encourage you to develop and implement such a policy as a matter of priority. It is also important that all services and staff encourage safe sleep practices in ways that are inclusive of Māori and Pacific cultures and values.

In many cases, infants who die of SUDI come from families where complex needs exist and vulnerability to a number of adverse outcomes can be recognised before death. Early identification of vulnerable infants and families provides an opportunity to implement intersectoral interventions and supports. Systems to ensure the ongoing assessment of needs from before birth, followed by planning and action to provide additional supports and interventions, are recommended.

The Perinatal and Maternal Mortality Review Committee (PMMRC) and the Child and Youth Mortality Review Committee (CYMRC) are statutory committees of the Commission, collectively mandated to

[37] For a sample of a DHB safe sleep policy, see the CYMRC website at: http://www.hqsc.govt.nz/our-programmes/mrc/cymrc/publications-and-resources/sudi/.

[38] It is important to ensure this work extends beyond maternity services to include paediatric medical and surgical services and other services where infants may be admitted with a parent such as adult medical, surgical and mental health services.

report on all perinatal, infant and child deaths in New Zealand. Both committees have made clear, evidence-based recommendations about the prevention of SUDI (see Appendix 1). I am enclosing a copy of the CYMRC's special report on SUDI from its *Fifth Report to the Minister of Health* (2009).

I would like to take this opportunity to thank you for considering what your DHB can do to contribute to SUDI prevention and also for your ongoing input into the PMMRC and CYMRC mortality review systems. In addition, we would appreciate a reply to this letter outlining what you are doing to prevent SUDI so we may acknowledge progress, offer support to DHBs that may encounter difficulties, and support the sharing of good practice and innovation across the DHBs.

More information about SUDI is available on the Commission website at http://www.hqsc.govt.nz/our-programmes/mrc/cymrc/publications-and-resources/sudi/. We will continue to add resources to this website, including any provided in response to this letter if we are granted permission by the DHB to do so. If you wish to discuss SUDI prevention further, please do not hesitate to contact us at info@hqsc.govt.nz or 04 901 6040.

Yours sincerely

Professor Alan Merry ONZM
Chair
Health Quality & Safety Commission

Dr Nick Baker
Chair
Child & Youth Mortality Review Committee

Enc: CYMRC's special report on SUDI from its *Fifth Report to the Minister of Health* (2009)

The following link will take you to the CYMRC's special report on SUDI from its fifth report to the Minister of Health (2009)

http://www.hqsc.govt.nz/assets/CYMRC/Publications/cymrc-5th-report-chp1-sudi.pdf

Perinatal and Maternal Mortality Review Committee (PMMRC) Third Report (SUDI) **Recommendations** - to the Minister of Health: July 2008 to June 2009

Available at: www.hqsc.govt.nz/assets/PMMRC/Publications/Third-PMMRC-report-2008-09.pdf

Recommendations
1. The Ministry of Health should prioritise the preparation and dissemination of a comprehensive statement for parents and caregivers on risk factors and methods of prevention of SUDI to be provided to pregnant women.
2. National guidelines should be developed for safe sleeping arrangements in postnatal wards, to improve ward safety and to model safe sleeping practices that parents can follow after discharge.

Child and Youth Mortality Review Committee (CYMRC) SUDI Recommendations

Available at: www.hqsc.govt.nz/assets/CYMRC/Publications/cymrc-5th-report-chp1-sudi.pdf

CYMRC Second Annual Report Recommendations, 2003–2004

In the second report, recommendations were made on the functioning of the review process and on measures for decreasing child and youth mortality in New Zealand.

Recommendations	**Chair's 2012 update on progress**
R2.9 All advisors and health care providers should actively promote safe sleeping practices. All services that offer care to infants and mothers should provide safe sleeping environments for infants.	Unsafe sleeping practices continue to contribute to a substantial proportion of sudden infant deaths in New Zealand.
R2.10 Further work should be undertaken to make sure the 'safe environment' message effectively reaches high-risk families, and that providers of care maintain their knowledge and advice on safe sleeping environments.	
R2.11 Earlier use should be made of the inter-agency case management for complex high-risk families with young infants or babies.	This is a continuing concern. More DHBs now have high need antenatal care pathways.

CYMRC Fourth Annual Report Recommendations, 2002–2006

The recommendations in the fourth report were as follows:

Recommendation	**Chair's 2012 update on progress**
R4.1 All lead maternity carers (LMCs) and providers of Well Child services focus on clarifying with parents what is known about safe sleeping environments for infants.	Unsafe sleeping practices continue to contribute to a substantial proportion of sudden infant deaths in New Zealand.
R4.2 Culturally appropriate and safe places for sleeping babies need developing and promoting.	Research is occurring in this area. A major challenge is ensuring that new sleeping arrangements do not come with unexpected hazards. There is increasing use and availability of the wahakura. Progress on district roll out of the Pepi-pod has occurring initially in Canterbury as a response to the earthquakes and now in several other DHBs.

CYMRC Fifth Annual Report Recommendations, 2002–2008

The recommendations in the fifth report were as follows:

Recommendation	Chair's 2012 update on progress
R1.2 That action on smoking cessation, before, during, and after pregnancy, be elevated to a level consistent with its status as a major health concern, especially for Māori and be more clearly linked to prevention of SUDI. DHBs should be required to report the smoking/ smokefree pregnancy status of their populations as a requirement of funding agreements	It is pleasing that smoking cessation has been chosen as a Ministerial target for District Health Boards. This has galvanised considerable work in this area. Further work is needed to ensure that this consistency extends into the area of reducing rates of smoking in pregnancy, especially around supporting young Māori women in not starting to smoke, and then into targeted smoking cessation in pregnancy with a view to reducing the toll of sudden infant death as well as other adverse outcomes such as still birth and prematurity.
R1.4 That every DHB implement a safe infant sleeping policy: a. for modelling safe sleeping practices in neonatal and postnatal facilities b. to ensure safe sleeping arrangements are in place for all babies at every sleep before discharge home c. to advise on safe strategies for night feeds and settling infants.	These safe sleep policies have been developed in a number of DHBs but consistency and quality across DHBs needs to be enhanced and all DHBs are not yet developed such policies. The presence of a policy is only a first step, implementation with training, resource development, transfer of information between providers and audit demonstrating good practice by skilled staff needs to follow.

Risk Factor Changes for Sudden Infant Death Syndrome After Initiation of Back-to-Sleep Campaign

Trachtenberg F L , Haas, E A, Kinney, H C, Stanley C, Krous, H.

Pediatrics, 2012, March; DOI: 101542/peds.2011-1419

Abstract

OBJECTIVE: To test the hypothesis that the profile of sudden infant death syndrome (SIDS) changed after the Back-to-Sleep (BTS) campaign initiation, document prevalence and patterns of multiple risks, and determine the age profile of risk factors.
METHODS: The San Diego SIDS/Sudden Unexplained Death in Childhood Research Project recorded risk factors for 568 SIDS deaths from 1991 to 2008 based upon standardized death scene investigations and autopsies. Risks were divided into intrinsic (eg, male gender) and extrinsic (eg, prone sleep).
RESULTS: Between 1991–1993 and 1996–2008, the percentage of SIDS infants found prone decreased from 84.0% to 48.5% (P < .001), bed-sharing increased from 19.2% to 37.9% (P < .001), especially among infants <2 months (29.0% vs 63.8%), prematurity rate increased from 20.0% to 29.0% (P = .05), whereas symptoms of upper respiratory tract infection decreased from 46.6% to 24.8% (P < .001). Ninety-nine percent of SIDS infants had at least 1 risk factor, 57% had at least 2 extrinsic and 1 intrinsic risk factor, and only 5% had no extrinsic risk. The average number of risks per SIDS infant did not change after initiation of the BTS campaign.
CONCLUSIONS: SIDS infants in the BTS era show more variation in risk factors. There was a consistently high prevalence of both intrinsic and especially extrinsic risks both before and during the Back-to-Sleep era. Risk reduction campaigns emphasizing the importance of avoiding multiple and simultaneous SIDS risks are essential to prevent SIDS, including among infants who may already be vulnerable.

Creating change: how knowledge translates into action for protectingbabies from sudden infant death

Cowan, S.

Current Pediatric Reviews 2010; 6: 86-94

Abstract

We know how to protect babies from sudden infant death syndrome (SIDS) and have had considerable success in doing so. Yet babies continue to die in non-supine positions, unsafe sleeping environments and exposed to smoking. Why? Understanding what underpins the success to date is essential to the design of strategies for the final stage of prevention. This paper reviews influences on changing SIDS mortality, describes the practice of creating change as it relates to protecting babies from sudden infant death, and presents three principles that emerge from the success to date to focus the design of research and intervention programmes for ending the SIDS story.

http://www.ispid.org/id_sudi.html

SIDS and other sleep related infant deaths: Expansion of recommendations for a safe sleeping environments

Task force on sudden infant death syndrome.

Pediatrics; originally published online October 17, 2011; DOI; 10.10.1542/peds.2011-2284.

Abstract

Despite a major decrease in the incidence of sudden infant death syndrome (SIDS) since the American Academy of Pediatrics (AAP) released its recommendation in 1992 that infants be placed for sleep in a nonprone position, this decline has plateaued in recent years. Concurrently, other causes of sudden unexpected infant death that occur during sleep (sleep-related deaths), including suffocation, asphyxia, and entrapment, and ill-defined or unspecified causes of death have increased in incidence, particularly since the AAP published its last statement on SIDS in 2005. It has become increasingly important to address these other causes of sleep-related infant death. Many of the modifiable and nonmodifiable risk factors for SIDS and suffocation are strikingly similar. The AAP, therefore, is expanding its recommendations from focusing only on SIDS to focusing on a safe sleep environment that can reduce the risk of all sleep-related infant deaths, including SIDS. The recommendations described in this policy statement include supine positioning, use of a firm sleep surface, breastfeeding, room-sharing without bed-sharing, routine immunizations, consideration of using a pacifier, and avoidance of soft bedding, overheating, and exposure to tobacco smoke, alcohol, and illicit drugs. The rationale for these recommendations is discussed in detail in the accompanying “Technical Report—SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment,” which is included in this issue of *Pediatrics* (www.pediatrics.org/cgi/content/full/128/5/e1341).

Sudden Infant Death Syndrome (SIDS) risk reduction and infant sleep location – Moving the discussion forward

Ball H L, ' Volpe L E. *Social Science & Medicine* Available online 21 April 2012.

Abstract

The notion that infant sleep environments are 'good' or 'bad' and that parents who receive appropriate instruction will modify their infant-care habits has been fundamental to SIDS reduction campaigns. However infant sleep location recommendations have failed to emulate the previously successful infant sleep position campaigns that dramatically reduced infant deaths. In this paper we discuss the conflict between 'safeguarding' and 'well-being', contradictory messages, and rejected advice regarding infant sleep location. Following a summary of the relevant background literature we argue that bed-sharing is not a modifiable infant-care practice that can be influenced by risk-education and simple recommendations. We propose that differentiation between infant-care practices, parental behaviours, and cultural beliefs would assist in the development of risk-reduction interventions. Failure to recognize the importance of infant sleep location to ethnic and sub-cultural identity, has led to inappropriate and ineffective risk-reduction messages that are rejected by their target populations. Furthermore transfer of recommendations from one geographic or cultural setting to another without evaluation of variation within and between the origin and destination populations has led to inappropriate targeting of groups or behaviours. We present examples of how more detailed research and culturally-embedded interventions could reorient discussion around infant sleep location.

Sudden infant death syndrome

Moon R Y ,Horne R S C, Hauck F R,

The Lancet Volume 370, Issue 9598, 3–9 November 2007, Pages 1578–1587

Summary

Despite declines in prevalence during the past two decades, sudden infant death syndrome (SIDS) continues to be the leading cause of death for infants aged between 1 month and 1 year in developed countries. Behavioural risk factors identified in epidemiological studies include prone and side positions for infant sleep, smoke exposure, soft bedding and sleep surfaces, and over-heating. Evidence also suggests that pacifier use at sleep time and room sharing without bed sharing are associated with decreased risk of SIDS. Although the cause of SIDS is unknown, immature cardiorespiratory autonomic control and failure of arousal responsiveness from sleep are important factors. Gene polymorphisms relating to serotonin transport and autonomic nervous system development might make affected infants more vulnerable to SIDS. Campaigns for risk reduction have helped to reduce SIDS incidence by 50–90%. However, to reduce the incidence even further, greater strides must be made in reducing prenatal smoke exposure and implement-ing other recommended infant care practices. Continued research is needed to identify the patho-physiological basis of SIDS.

The wahakura and the safe sleeping environment

Tipene-Leach, D, Abel S. .

Pounamu J of Primary Health Care. 2010. 2; 81.

Introduction

Maori have always been grossly over-represented in SIDS (sudden infant death syndrome) deaths. The change from the prone to the back sleeping position has been associated with a huge decrease in post-neonatal deaths, but an increase in the disparities between Maori and non-Maori rates. This is because the primary risk factor for SIDS is now maternal smoking in pregnancy where the infant co-sleeps with an adult. Half of Maori mothers are smokers, many of whom sleep with their infants, and therein lies the problem. Of all the infants who died of SIDS/SUDI (sudden unexpected death in infancy) in the last five years, most of their mothers were smokers, well over half were in the parental bed and the others were in an unsafe cot/bassinet environment (bumpers and pillows) or an unsafe sleeping position (prone or side). In other words, vulnerable babies were in unsafe sleeping environments. The huge majority of these babies lived with their otherwise normal and loving families, although most often in rather poor socioeconomic circumstances.

Whilst we should consistently advocate smoking cessation in pregnancy and a safer sleeping environment, this advice often proves difficult to effect. There is, however, a new pathway towards SIDS prevention that has a huge potential to mitigate the above risks. The *wahakura* concept is built around a traditional Maori infant sleeping practice and the 2005 American Academy of Pediatrics SIDS prevention recommendations. The placing of baby to sleep in this 14"x28" bassinet-like structure woven of flax seeks to reduce the risks inherent in the sleeping environment and, at the same time, appeal to the smoking Maori mother who might reject advice not to co-sleep.

Bed sharing and the risk of sudden infant death syndrome: can we resolve the debate?

Vennemann MM, Hense HW, Bajanowski T, Blair PS, Complojer C, Moon RY, Kiechl-Kohlendorfer U

J Pediatr. 2012 Jan;160(1):44-8.e2. Epub 2011 Aug 24.

Objective: To conduct a meta-analysis on the relationship between bed sharing and sudden infant death syndrome (SIDS) risk.

Study design: Data from PubMed and Medline were searched for studies published after Jan 1, 1970. The search strategy included articles with the terms "sudden infant death syndrome," "sudden unexpected death," and "cot death" with "bed sharing" or "co-sleeping." To further specify the potential risk of bed sharing and SIDS, subgroup analyses were performed.

Results: Eleven studies met inclusion criteria and were included in the final meta-analysis. The combined OR for SIDS in all bed sharing versus non-bed sharing infants was 2.89 (95% CI, 1.99-4.18). The risk was highest for infants of smoking mothers (OR, 6.27; 95% CI, 3.94-9.99), and infants <12 weeks old (OR, 10.37; 95% CI, 4.44-24.21).

Conclusions: Bed sharing is a risk factor for SIDS and is especially enhanced in smoking parents and in very young infants.

Unsafe sleep practices and an analysis of bedsharing among infants dying suddenly and unexpectedly: results of a four-year, population-based, death-scene investigation study of sudden infant death syndrome and related deaths.

Kemp JS, Unger B, Wilkins D *et al*.

Pediatrics 2000; 106: E41

Background. Prone sleep and unsafe sleep surfaces increase the risk of sudden infant death. Recent epidemiologic studies also suggest that when an infant's head or face is covered by bedding, or when a sleep surface is shared with others, the risk of dying increases. The inference of a causal role for these risk factors is supported by physiologic studies and by the consistent finding that fewer infants die when risk factors are reduced. The prevalence of most of these risk factors in infant deaths in the United States is uncertain.

Objective. To describe the prevalence of several important risk factors related to sleep practices among a defined population of infants dying suddenly and unexpectedly.

Methods. In this population-based study, we retrospectively reviewed death-scene information and medical examiners' investigations of deaths in the city of St Louis and St Louis County between January 1, 1994 and December 31, 1997. Because of the potential for diagnostic overlap, all deaths involving infants <2 years old with the diagnoses of sudden infant death syndrome (SIDS), accidental suffocation, or cause undetermined were included.

Results. The deaths of 119 infants were studied. Their mean age was 109.3 days (range: 6–350). The diagnoses were SIDS in 88 deaths, accidental suffocation in 16, and undetermined in 15. Infants were found prone in 61.1% of cases and were found on a sleep surface not designed for infants in 75.9%. The head or face was covered by bedding in 29.4%. A shared sleep surface was the site of death in 47.1%. Only 8.4% of deaths involved infants found nonprone and alone, with head and face uncovered

Conclusions. Using detailed death-scene descriptions, we found that similar unsafe sleeping practices occurred in the large majority of cases diagnosed as SIDS, accidental suffocation, and cause undetermined. Considering these diagnoses together may be useful in public health campaigns during a time when there may be diagnostic overlap. Regardless of the diagnosis, recommendations that infants sleep supine on firm sleep surfaces that lessen the risk of entrapment or head covering have the potential to save many lives. Campaigns are needed to heighten awareness of these messages and of the risks of dangerous bedsharing.

Never Sleep With Baby? Or Keep Me Close But Keep Me Safe: Eliminating Inappropriate "Safe Infant Sleep" Rhetoric in the United States.

Gettler L T, McKenna J J.

Current Pediatric Reviews 2010; 6: 71-77.

Abstract

Creating public health messages regarding how mothers should sleep close and safely with their babies is tricky and complex. It requires an appreciation of what exactly the term "sleeping with baby" and "co-sleeping" can mean. It also requires sensitivity to what parents will or can do if told emphatically "never sleep with your baby." In the United States, well-intentioned public health messages from prominent government agencies about safe infant sleep have increasingly used language that equates "safe infant sleep" with the absence of the mother. Many messages seemingly imply that all forms of "co-sleeping" are dangerous and that those parents that practice it are acting irresponsibly. Messages such as "babies sleep safest alone" conflict with both laboratory and epidemiological findings as well as with recommendations from most medical organizations, including the American Academy of Pediatrics, who state that mothers and babies should sleep on separate surfaces close together in the same room. Moreover, studies reveal that breastfeeding and forms of co-sleeping, including both roomsharing and bedsharing, are functionally interdependent and that many mothers worldwide find that they can manage their own and their infant's needs more easily by adopting at least intermittent bedsharing. Hence, simple, unqualified recommendations against ever bedsharing are not likely to be followed. According to recent studies the most effective public health recommendations are likely to be those that educate parents and facilitate parents in implementing bedsharing safe-guards alongside their own choices. This approach does not exclude informing parents of what we know can be dangerous about some bedsharing practices, nor where and when it should be avoided altogether. Rather, it acknowledges that while separate surface co-sleeping in the form of roomsharing should always be recommended, nonetheless, many parents will appreciate and benefit from the opportunity to learn how to reduce the risks associated with bedsharing.

Further research articles can be found at: http://www.ispid.org/id_sudi.html

Journal of Paediatrics and Child Health

doi:10.1111/j.1440-1754.2011.02215.x

POSITION PAPER

Scientific consensus forum to review the evidence underpinning the recommendations of the Australian SIDS and Kids Safe Sleeping Health Promotion Programme – October 2010

Edwin A Mitchell,[1] Jane Freemantle,[2] Jeanine Young[3,4] and Roger W Byard[5]

[1]Department of Paediatrics, University of Auckland, Auckland, New Zealand and [2]Centre for Health and Society, Melbourne School of Population Health, University of Melbourne, Melbourne, and [3]Children's Health Services, Royal Children's Hospital, Brisbane, and [4]Research Centre for Clinical and Community Practice Innovation, Griffith University, Brisbane, Queensland, and [5]Discipline of Pathology, The University of Adelaide, Adelaide, South Australia, Australia

Abstract: This paper summarises a 1-day scientific consensus forum that reviewed the evidence underpinning the Australian SIDS and Kids Safe Sleeping Health Promotion Programme. The focus was on each of the potentially modifiable risk factors for sudden unexpected deaths in infancy, including sudden infant death syndrome (SIDS) and fatal sleeping accidents. In particular infant sleeping position, covering of the face, exposure to cigarette smoke, room sharing, unsafe sleeping environments, bed sharing, immunisation, breastfeeding, pacifier use and Indigenous issues were discussed in depth. The participants recommended that future 'Reducing the Risk' campaign messages should focus on back to sleep, face uncovered, avoidance of cigarette smoke before and after birth, safe sleeping environment, room sharing and sleeping baby in own cot.

Key words: bed sharing; breastfeeding; infant care practices; sleep position; smoking; sudden infant death.

Introduction

Sudden infant death syndrome (SIDS) refers to 'the sudden death of an infant under one year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history'.[1] This definition was modified in 2004 to include an apparent association with sleep, and a broader requirement for a death scene examination to include an evaluation of the entire circumstances of death.[2] The most significant developments over the past two decades have involved the identification of behaviours and situations that decrease the likelihood of a SIDS death.

In Australia, infant deaths attributed to SIDS among non-Indigenous Australians have fallen approximately 83% during the last 20 years.[3] Evidence suggests that the marked reduction in SIDS incidence can be directly associated with Australian public health campaigns that promoted safe sleeping practices and, in particular, advice to parents to place infants on their backs when sleeping.[4] Despite these significant reductions in infant mortality, SIDS continues to comprise the largest category of deaths occurring in the post-neonatal period (between 28 and 365 days after birth).[5] However, these significant reductions in SIDS have not been observed among Indigenous Australians, and total population data from Western Australia reports a non-significant decrease in SIDS and a corresponding increasing risk ratio when comparing Indigenous infant mortality rates attributable to SIDS to that observed among non-Indigenous infants.[6]

Previous expert forums have been held in Australia – in Canberra in 1991 and in Melbourne in 1997[7,8] – to examine the validity of the 'Reducing the Risk' campaign messages. In 1997, the agreed messages were:

- Put baby on the back to sleep, from birth
- Sleep baby with face uncovered
- Cigarette smoking is bad for babies: avoid exposing baby to tobacco smoke before birth and after.

In 2002, two further recommendations were added:

- Provide a safe sleeping environment, day and night: safe cot, safe mattress, safe bedding and safe sleeping place
- Sleep baby in their own cot in the same room as their parents for the first 6–12 months of life.

Key Points

1. Sudden infant death syndrome (SIDS) mortality has decreased dramatically since the 'Reducing the Risk' campaign, which advised mothers to put baby on the back to sleep.
2. The consensus forum recommended that future 'Reducing the Risk' campaigns should focus on back to sleep, face uncovered, avoidance of cigarette smoke before and after birth, safe sleeping environment, room sharing and sleeping baby in own cot.
3. Adherence to these recommendations is estimated to reduce sudden unexpected death in infancy to less than 0.1 per 1000 live births.

Correspondence: Professor Ed Mitchell, Department of Paediatrics, University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Fax: +64 9 3737486. email: e.mitchell@auckland.ac.nz

Disclaimer: This statement and recommendations are not necessarily endorsed by all the participants, nor are the opinions necessarily those of the authors. The authors have attempted to capture the evidence presented, the discussions and recommendations.

Accepted for publication 3 August 2011.

Epidemiological investigations have shown that many of the maternal, infant and socio-demographic risk factors for SIDS are common to the broader category of sudden unexpected deaths in infancy (SUDI) and to fatal sleep accidents. Therefore, safe sleeping strategies will target all three of these categories of infant death.[5,9,10]

Epidemiological features of SIDS have changed since the 1997 'Reducing the Risk' campaign. Examples of recent changes include a younger median age of victims nowadays, a reduction in the previous winter peak[11] and thermal risk factors are much less important now that few babies sleep prone.[12] For this reason, a forum of invited experts and others involved in the field from Australasia and overseas was convened by SIDS and Kids in Sydney, Australia in October 2010 to provide an up-to-date examination of the evidence base for risk factors for SUDI and to endorse, or propose, recommendations based on this evidence.

Specific Issues

Prone sleeping and side-sleeping

Evidence from many countries shows that prone sleeping increases the risk of SIDS by between 3–14 times, with a population attributable risk ranging from 38–82%.[13–19] Side sleeping also significantly increases the risk of sudden infant death primarily because of the greater possibility of an infant rolling prone during sleep.[20,21] Rolls and devices intended to keep an infant in the side position do not stop rolling prone and are therefore not recommended.[22–24] Prone position when awake ('tummy time') is recommended to help develop head control[25] and reduce the risk of deformational plagiocephaly.[26]

There is substantial observational evidence that the risks of aspiration, apnoea and cyanosis are not increased when the supine position is used.[27,28] A systematic review that investigated the effect of positioning in improving outcome of gastro-esophageal reflux in developmentally normal infants from 1 month to 2 years of age concluded that the prone position should not be used for any infant who is still within an age range to be at risk for SIDS.[29] Aspiration of gastric contents is also not a problem in countries that traditionally place infants on their backs (e.g. Hong Kong).[30,31]

Covering of the face

A meta-analysis of 10 age-matched controlled studies by Blair and colleagues[32] showed a consistent risk associated with head covering. By head covering the authors meant covering of the face with bedding and did not refer to covering the head with a bonnet or hat. A quarter of SIDS infants are found with their heads under bedclothes representing an eightfold difference compared to age-matched controls, with an increased risk of sudden infant death of approximately 17 times (with a resultant Adjusted Odds Ratio (AOR) of 16.9; 95% CI = 12.6–22.7). The magnitude of the risk increases when other factors are controlled for (including sleep environment, position and smoking).[32] If head covering is causally related to SIDS,[33] the population attributable risk of 27.1% suggests that avoiding head covering might reduce SIDS deaths by more than a quarter.[32] The increased risk may be associated with airway obstruction, mechanical suffocation or overheating.[32,33]

Doonas, duvets and quilts are considered high risk, even after other factors were controlled for, due to their propensity to totally cover infants (AOR 1.88; 95% CI = 1.14–3.12).[22,32] Limited evidence supports the advantages of 'feet to foot' sleeping for infants, or the use of sleeping bags.[34]

Exposure to cigarette smoke

Smoking and exposure to environmental tobacco smoke adversely affects infant health by increasing the likelihood of stillbirth, low birth weight, prematurity, and respiratory infections.[3,35,36] An increased risk of SIDS has been demonstrated in more than 60 studies associated with smoking during pregnancy as well as through passive smoking.[37] The risk of SIDS for mothers who smoked during pregnancy is approximately four times greater than that of non-smokers (Relative Risk 3.9; 95% CI = 3.8–4.1).[38] It is estimated that a third of SIDS deaths could be avoided if *in utero* smoke exposure was eliminated.[24,38,39]

It is difficult to separate the effects of postnatal environmental tobacco smoke exposure from smoking in pregnancy, as parental smoking behaviours during and after pregnancy are highly correlated.[37–40]

An independent effect for paternal smoking has also been found, although it is lower than the risk associated with maternal smoking. Paternal smoking risk where mother is a non-smoker has an estimated risk of 1.5 times (summary odds ratio of 1.47) compared to an infant with both parents who do not smoke.[38] Many studies support a dose-response relationship, with the risk of sudden infant death increasing with the number of cigarettes smoked.[39] The amount of smoke exposure increases with the number of household smokers, the number smoking in the same room as the infant, the number of cigarettes smoked, and the daily hours that an infant is exposed to a smoke-filled environment.[36,37,39,40] The population attributable risk attributed to smoking by mother, father or both parents/caregivers has been estimated as high as 62%, meaning that SIDS deaths could be reduced by approximately 62% if smoking could be stopped.[39] Smoking is also associated with low rates of breast-feeding initiation and duration.[41,42] Smoking is now the most important modifiable risk factor in reducing the risk of sudden infant death.[24,37,39]

Room sharing

Several studies have reported that infants who sleep in a separate room from their caregivers have an increased risk of SIDS[42–46], with one large case–control study demonstrating a 10-fold increased risk associated with solitary sleeping.[46] The protective effect of room-sharing does not include room-sharing with siblings or other children.[44,47,48] SIDS infants who slept separately from their parents are more likely to be found with bedclothes covering their heads, and if placed on their sides to sleep, were more likely to be found prone, compared to infants who slept in the same room as their caregiver.[49] The recommendation to room-share with infants for the first 6–12 months is supported by studies in a number of countries including Australia, New Zealand, the United Kingdom, the United States, Canada and most northern European countries.[13,50] There is no

evidence to suggest that this recommendation should not apply to parents who smoke, although it should be emphasised that parents should not smoke in the bedroom.

Unsafe sleeping environments

Infant deaths in cots may also be due to unsafe environments that have led to fatal hanging or wedging.[51] All new and second-hand cots being sold must comply with the Australian Standard for household cots (AS/NZS 2172) and should carry a sticker showing compliance.[52] Ill-fitting mattresses may result in infants wedging in the gaps between the mattress and the cot side that can lead to suffocation.[52,53] Prams, strollers, bouncinettes and rocker chairs are not designed as infant sleep environments, and fatal sleeping accidents have occurred when babies were left unsupervised in these environments.[52,53]

Soft bedding and soft surfaces, including pillows, quilts, comforters, sheepskins and porous mattresses, have been shown to be important risk factors as they may lead to airway obstruction, suffocation and overheating.[24,54–56] Mattresses may also sag, producing troughs into which infants become entrapped causing suffocation.[55] A strong interaction has been found between prone sleep position and a soft bedding surface.[57]

There is no evidence to suggest that antimony- and phosphorus-containing compounds used as fire retardants in cot mattress materials are a cause of SIDS.[58,59]

Shared sleeping (bed sharing and co-sleeping)

There is often confusion about terminology with various terms used to define shared sleep environments between infants and their carers, including co-sleeping and bed sharing. In this section, we refer to bed sharing as being the mother (it is usually the mother, but can include fathers or other adults) sleeping with the infant on the same sleeping surface (usually a mattress).

Recent surveys have shown that 50+% of infants who die suddenly and unexpectedly are found in a bed-sharing situation.[34,60,61] The risk of SIDS with bed sharing is high when the mother smokes.[34,43,45,50,62–64] There is a small increased risk when the mother does not smoke for infants less than 3 months of age.[43] Bed-sharing infants placed back in their cot are not at increased risk of SIDS.[34] The risk is increased by parental sedation (including non-prescription drugs, alcohol and maternal fatigue), soft surfaces (i.e. pillows, beanbags, waterbeds), multiple bed sharers (especially siblings) and maternal obesity.[34,65] Infants at highest risk are those born preterm or were born small for gestational age.[66,67]

Sleeping on a sofa with a baby is associated with a significantly high risk of sudden infant death and fatal sleeping accidents and should be avoided.[48,68] The increased risk has been seen mainly in the UK, and has not been identified as a risk in New Zealand or Germany, possibly because few babies in these countries are exposed to the risk of their mothers sleeping on sofas (Mitchell and Vennemann, pers. comm., 2010).

There is no evidence that bed sharing is protective against SIDS in any group. When an interaction is present, removal of either factor will achieve the same effect.

The potential benefits of bed sharing need to be discussed. The major documented benefit relates to breastfeeding.[69] Bed sharing is associated with more frequent suckling,[70] although duration of feeds may be shorter compared to room-sharing and solitary sleeping babies.[70,71] Bed-sharing babies also show reduced intervals between feeds relative to solitary sleeping infants.[72] Bed sharing is associated with reduced formula supplementation[68,71] and a longer duration of breastfeeding (in terms of infant age)[73,74] but this may not be causal. Some groups have promoted bed sharing as a strategy to improve breastfeeding.

Physiological studies have shown that when bed sharing, both mother and baby have more arousals compared with solitary sleeping.[71,75,76] Resulting sleep fragmentation could be detrimental or even possibly protective in early infant development. Such studies have also documented increased maternal responsiveness, including the adaption of maternal body positioning that facilitates breastfeeding.[71,77,78] However some studies have documented increased episodes of infant head covering by mothers in bed-sharing environments.[79]

Other benefits claimed include enhanced maternal–infant bonding,[80–83] improved settling with reduced crying,[71,84,85] improved maternal and infant sleep,[86,87] and long-term psychological outcomes, including increased self esteem and discipline.[81,82]

It should be stressed that the forum does not suggest that babies should not be brought into the parent's bed for comfort and feeding. This has been investigated in previous studies and has not been found to be a risk factor provided the infant is returned to his own cot. The concern is with risks associated with *sleeping* with a baby in the parental bed.

Bed sharing is controversial because of opposing views on the benefits and risks associated with this practice. Some have argued that the risk of SIDS and accidental asphyxia out ways any potential benefits, whereas others have argued that it is a valued culturally determined practice. As a consequence, some health professionals do not even discuss the risk, so it is probably not surprising that surveys show that less than half of mothers of infants do not know that bed sharing increases the risk of death.[88] Mitchell has argued that whatever one's stance is in this debate that parents have a right to know the risk.[89] For parents to make an informed decision about the infant care practices they use, health professionals have an important role in ensuring that parents are provided with clear information that includes the evidence base for both the risks and benefits of bed sharing with babies.[74,89–94]

Immunisation

Parents are advised to immunise their babies according to the national vaccination schedule.[95,96] The possibility of the DTP (diphtheria-tetanus-pertussis) vaccination being linked to SIDS has been discussed periodically over the last 20 years, however a series of studies have consistently refuted the association.[97–99] A recent meta-analysis published provides strong evidence that immunisation is associated with a decreased risk of SIDS (OR 0.54; 95% CI = 0.39–0.76).[100]

Breast feeding

There are many known benefits of breastfeeding, including the reduced risk of postneonatal mortality.[101] Epidemiologic studies measuring the association between breastfeeding and SIDS have been inconsistent.[102–105] A recent meta-analysis found a protective effect of breastfeeding, but only 6 studies were included and they analysed 'ever breastfeeding' only.[106] A meta-analysis of 24 original published case-control studies was presented (F Hauck *et al*., unpubl., 2010). The univariate OR was 0.49 (95% CI = 0.45–0.53). Nine studies reported adjusted ORs and the pooled OR was 0.68 (95% CI = 0.58–0.80). Exclusive breastfeeding was associated with a lower pooled OR (0.32; 95% CI = 0.28–0.36). Four studies examined information about 'any breastfeeding at 2 months of age' (univariable OR was 0.33; 95% CI = 0.26–0.41). The authors concluded that any breastfeeding is protective compared with no breastfeeding, but the protective effect is stronger for exclusive breastfeeding and for longer duration of breastfeeding. Although there is a clear association between breastfeeding and a reduced risk of SIDS, the possibility that this is due to confounding factors cannot be eliminated.[107]

Pacifiers (or dummies)

The New Zealand study was the first to find a potential protective association between using a dummy for the last sleep and a reduced risk of SIDS[108], which was confirmed in the CESDI study.[109] Since then, this has been confirmed by other studies,[110] while thumbsucking has also been associated with a reduced risk of SIDS.[111,112] Two meta-analyses of eight case–control studies have shown a strong protective effect of pacifiers reducing the risk to a third.[113,114] In the United States, the American Academy of Pediatrics has recommended the use of pacifiers once breastfeeding has been established.[23] The authors[114] of the other meta-analysis urged caution, and argued that further understanding was needed of any direct protective effect as well as concerns of any negative impact, in particular on breastfeeding and rates of infection. They recommended that pacifiers were not discouraged but did not specifically recommend their use.[114]

Other Topics

Indigenous issues

High rates of SIDS and SUDI deaths occur in disadvantaged Indigenous groups globally.[115] In Australia, linked total population data from Western Australia reports that the risk of an infant dying as a result of SUDI remains significantly higher when compared to the risk for non-Indigenous infants.[6]

Collection of data in these groups needs to be culturally sensitive, for example discussions of deaths may uncover significant loss and grief issues that are not typical of non-Indigenous groups. Other issues involve language differences and geographic isolation. In Australia in all the states that have available data, SUDI rates are higher in Aboriginal and Torres Strait infants than in the other ethnic groups.[116]

There were a number of presentations relating to the risk of SIDS in the Aboriginal population. These highlighted the higher mortality rates, the socio-economic disadvantages, overcrowding, the higher rates of low birth weight, abuse, alcohol and substance abuse, smoking and co-sleeping.[117,118]

Intervention programmes will, therefore, need to be adapted to the needs of local communities, with adequate funding. A recent Indigenous led project in Western Australia, Reducing the Risk of SIDS in Aboriginal Communities is an excellent example of such a programme. This project has developed culturally appropriate resources and training for the prevention of sudden and unexpected infant death, including SIDS and fatal sleeping accidents, among Western Australian Indigenous infants. Target groups and their leaders were closely engaged in the process from its earliest stages, with cultural practices being understood and incorporated into training practices. This project provided messages that were consistent and delivered using simple and non-confusing language; for example, the term 'cot death' was avoided as this implied that the deaths are related only to cot usage. This programme is now being extended in these communities and these steps will maximise the chances of increasing awareness and behavioural change.

A number of presentations described other innovative interventions in both Australian and International Indigenous communities. Some of these programmes are yet to be fully evaluated. These are outside of the scope of this report.

Recommendations

In the last part of the forum the participants took this evidence and determined what the public health messages should be. These recommendations are strategies based on identified modifiable risk factors which health professionals, parents and caregivers can influence:

These recommendations were:

- Put baby on the back to sleep, from birth
- Sleep baby with face uncovered: use an infant sleeping bag or place baby with feet to the foot of the cot, if sleeping in a cot
- Avoid cigarette smoke: keep baby smoke-free before and after birth.
- Provide a safe sleeping environment, night and day with a safe cot, a safe mattress, safe bedding and a safe sleeping place
- Place baby in a cot beside the parent's bed for the first 6–12 months of life

In particular, the forum endorsed the International Society for the Study and Prevention of Perinatal and Infant Death (ISPID) recommendations relating to a safe sleeping place (reproduced with permission):[119]

- Place the baby to sleep in its own crib next to the parents' bed for the first 6 months (room sharing).
- Never share a bed with baby if you or your partner smoke. Babies whose parents smoke are at increased risk of SIDS while co-sleeping.
- Never share a bed with baby when you have had alcohol or drugs. (Don't use alcohol or drugs when caring for your baby, especially ANY TIME you may fall asleep.) Babies whose parents have recently used alcohol or drugs are at increased risk of SIDS (and accidental suffocation) while co-sleeping.

- There is a slightly increased risk of SIDS with bed sharing for infants less than 3 months even if they were not exposed to cigarettes, particularly if the baby was small (less than 2.5 kg) at birth or born prematurely.
- In some countries there is a recommendation to avoid all bed sharing, although some disagree and advise avoiding bed sharing only if there are other risk factors present such as smoking or alcohol use.
- Never sleep with baby on a couch or sofa. This increases the risk of SIDS and fatal sleep accidents.

It was decided that immunisation, breastfeeding and pacifiers would be discussed as general health messages but not specifically recommended as 'Reducing the Risk' messages.

General health messages

Immunisation

Parents are advised to immunise their babies according to the national vaccination schedule.

Breastfeeding

Breastfeeding is associated with reduced infant mortality and morbidity worldwide. Breastfeeding is beneficial and should be encouraged as it promotes healthy outcomes for infants and mothers, however it is not currently recommended as a specific strategy to reduce the risk of sudden infant death.

Pacifier use

If parents choose to use a pacifier, and wish to breastfeed, it is recommended that pacifier only be introduced after the first 4–6 weeks for breastfed babies, as pacifier use may interfere with breastfeeding becoming established. Parents are also advised not to force the child to use a pacifier and that if the pacifier falls out of the mouth during sleep not to reinsert it.

Cultural considerations

Although families may share particular cultural practices, values and beliefs on the basis of common ethnic origins, all families have individual features and characteristics and are not defined just by their race or ethnicity.[120] Poor awareness of risk factors for sudden infant death does not directly translate to suboptimal infant care practices; however raising parental awareness of safe sleeping recommendations by health professionals in culturally sensitive ways will assist in reducing the risk of sudden infant death for all infants.

Conclusion

There is sufficient and compelling evidence to suggest that over 90% of sudden and unexpected deaths in infancy are associated with preventable risk factors. Implementation of these 'Reducing the Risk' messages could result in a reduction of sudden unexpected death in infancy to less than 0.1 per 1000 live births. The challenge is to implement this knowledge.

Speakers and Participants

Chair:	Jane Freemantle
Rapporteur:	Roger Byard
Coordinator:	Dorothy Ford
Speakers:	Jane Freemantle, Jeanine Young, Fern Hauck, Edwin Mitchell, Peter Blair, Barry Taylor, Sharron Yarran, Shauna Gaebler, Katie Panaretto, Janice Finlayson, Wanda-Phillips Beck, Rachel Eni, Anthony Schapel.
Participants:	Rachel Moon, Caroline Blackwell, Rosemary Horne, Elizabeth Murphy, Paul Colditz, Karen Waters, Kate Mortensen, Noel Woodford, Christine Erskine, Matthew Lynch, John Olle, Yeliena Baber, Brad Thach, Caroline Homer, Susan Beal, Jackie Scurlock, Gaye Edgecombe, Heather Jeffery, Vicki Flenady, Leanne Raven, Jill Green, Lorraine Harrison, Sharon Davis, Anne Callahan, Maxine Weber, Christine Paynter, Dorothy Ford, Louise Ellis, Susan Arbuckle, Catherine Cotter, Helen Cunningham and Joanne Pittock.
Observers	SIDS and Kids Educators

Acknowledgements

The meeting was funded by SIDS and Kids Australia. Ed Mitchell is supported by Cure Kids.

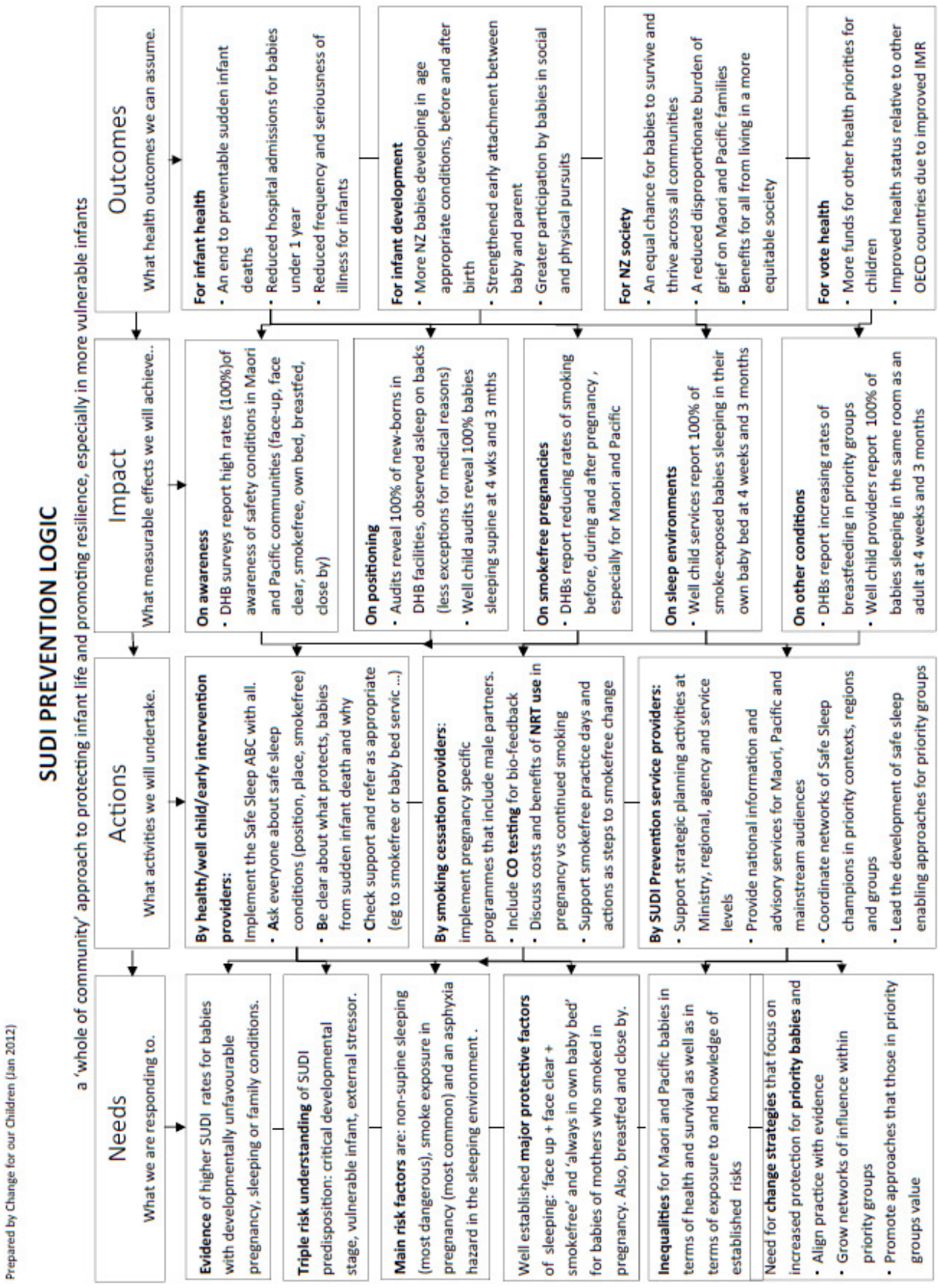
References

1 Willinger M, James LS, Catz C. Defining the sudden infant death syndrome (SIDS): deliberations of an expert panel convened by the National Institute of Child Health and Human Development. *Pediatr. Pathol.* 1991; **11**: 677–84.
2 Krous HF, Beckwith JB, Byard RW *et al*. Sudden infant death syndrome (SIDS) and unclassified sudden infant deaths (USID): a definitional and diagnostic approach. *Pediatrics* 2004; **114**: 234–8.
3 Linacre S. *Australia's Babies: Australian Social Trends 2007 (Catalogue No. 4102.0)*. Canberra: Australian Bureau of Statistics, 2007.
4 Tursan d'Espaignet E, Bulsara M, Wolfenden L, Byard RW, Stanley FJ. Trends in sudden infant death syndrome in Australia from 1980 to 2002. *Forensic Sci. Med. Pathol.* 2008; **4**: 83–90.
5 Commission for Children and Young People and Child Guardian Queensland. *Annual Report: Deaths of children and young people, Queensland 2006-07*. Commission for Children and Young People and Child Guardian Queensland, Brisbane, 2007.
6 Freemantle CJ, Read AW, de Klerk NH, McAullay D, Anderson IP, Stanley FJ. Sudden Infant Death Syndrome – Aboriginal and non-Aboriginal disparities among infants born in Western Australia from 1980-2001 inclusive. *J. Paediatr. Child Health* 2006; **42**: 445–51.
7 Stanley FJ, Byard RW. The association between the prone sleeping position and sudden infant death syndrome (SIDS): an editorial overview. *J. Paediatr. Child Health* 1991; **27**: 325–8.
8 Henderson-Smart DJ, Ponsonby A-L, Murphy ME. Reducing the risk of sudden infant death syndrome: a review of the scientific literature. *J. Paediatr. Child Health* 1998; **34**: 213–19.
9 Fleming PJ, Blair PS, Bacon C, Berry J, eds. *Sudden Unexpected Deaths in Infancy: The CESDI SUDI Studies 1993-1996*. London: The Stationery Office, 2000.

10 Vennemann MMT, Bajanowski T, Butterfaβ-Bahloul T *et al*. Do risk factors differ between explained sudden unexpected death in infancy (SUDI) and SIDS? *Arch. Dis. Child.* 2007; **92**: 133–6.
11 Mitchell EA, Brunt JM, Everard C. Reduction in mortality from sudden infant death syndrome in New Zealand: 1986-92. *Arch. Dis. Child.* 1994; **70**: 291–4.
12 Mitchell EA. What is the mechanism of SIDS? Clues from epidemiology. *Dev. Psychobiol.* 2009; **51**: 215–22.
13 Mitchell EA. Risk factors for SIDS. *Br. Med. J.* 2009; **339**: b3466. doi: 10.1136/bmj.b3466.
14 National Institute of Clinical Studies. The risk of SIDS: placing infants to sleep on their back to reduce the risk of SIDS. *NICS Evid.-Pract. Gaps Rep.* 2005; **2**: 10–13.
15 Oyen N, Markestad T, Skjaerven R *et al*. Combined effects of sleeping position and prenatal risk factors in sudden infant death syndrome: the Nordic epidemiological SIDS study. *Pediatrics* 1997; **100**: 613–21.
16 Commission for Children and Young People and Child Guardian. Annual Report Deaths of children and young people: Queensland 2007-08. Commission for Children and Young People and Child Guardian, Queensland, Brisbane, 2008.
17 Gilbert R. The changing epidemiology of SIDS. *Arch. Dis. Child.* 1994; **70**: 445–9.
18 Sullivan FM, Barlow SM. Review of risk factors for sudden infant death syndrome. *Paediatr. Perinat. Epidemiol.* 2001; **15**: 144–200.
19 Gilbert R, Salanti G, Harden M, See S. Infant sleeping position and the sudden infant death syndrome: systematic review of observational studies and historical review of recommendations from 1940 to 2002. *Int. J. Epidemiol.* 2005; **34**: 874–87.
20 Mitchell EA. SIDS: facts and controversies. *Med. J. Aust.* 2000; **173**: 175–6.
21 Scragg RK, Mitchell EA. Side sleeping position and bed sharing in the sudden infant death syndrome. *Ann. Med.* 1998; **30**: 345–9.
22 Fleming PJ, Blair PS, Bacon C *et al*. Environment of infants during sleep and risk of the sudden infant death syndrome: results of 1993-5 case-control study for confidential inquiry into stillbirths and deaths in infancy. Confidential Enquiry into Stillbirths and Deaths Regional Coordinators and Researchers. *Br. Med. J.* 1996; **313**: 191–5.
23 American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. The changing concepts of Sudden Infant Death Syndrome: diagnostic coding shifts, controversies regarding the sleeping environment, and new variables to consider in reducing the risk. Implications for infant sleeping environment and sleep position. *Pediatrics* 2005; **116**: 1245–5.
24 Moon RY, Horne RS, Hauck FR. Sudden infant death syndrome. *Lancet* 2007; **370**: 1578–89.
25 Majnemer A, Barr RG. Association between sleep position and early motor development. *J. Pediatr.* 2006; **149**: 623–9. e1.
26 Hutchison BL, Thompson JMD, Mitchell EA. The determinants of nonsynostotic plagiocephaly: a case-control study. *Pediatrics* 2003; **112**: e316–22.
27 Jeffery HE, Megevand A, Page H. Why the prone position is a risk factor for sudden infant death syndrome. *Pediatrics* 1999; **104**: 263–9.
28 Byard RW, Krous HF. Sudden infant death syndrome: overview and update. *Pediatr Dev. Pathol* 2003; **6**: 112–27.
29 Craig WR, Hanlon-Dearman A, Sinclair C, Taback SP, Moffatt M. Metoclopramide, thickened feedings, and positioning for gastro-oesophageal reflux in children under two years. *Cochrane Database Syst. Rev.* 2010: CD003502. doi: 10.1002/14651858.CD003502.pub3.
30 Lee NN, Chan YF, Davies DP, Lau E, Yip DC. Sudden infant death syndrome in Hong Kong: confirmation of low incidence. *Br. Med. J.* 1989; **298**: 721.
31 Nelson EAS, Taylor BJ, Jenik A *et al*. International child care practices study: infant sleeping environment. *Early Hum. Dev.* 2001; **62**: 43–55.
32 Blair PS, Mitchell EA, Heckstall-Smith EMA, Fleming PJ. Head covering – A major modifiable risk factor for Sudden Infant Death Syndrome: a systematic review. *Arch. Dis. Child.* 2008; **93**: 778–83.
33 Mitchell EA, Thompson JM, Becroft DM *et al*. Head covering and the risk for SIDS: findings from the New Zealand and German SIDS case-control studies. *Pediatrics* 2008; **121**: e1478–83.
34 Blair PS, Sidebotham P, Evason-Coombe C, Edmonds M, Heckstall-Smith EM, Fleming P. Hazardous cosleeping environments and risk factors amenable to change: case-control study of SIDS in south west England. *Brit. Med. J.* 2009; **339**: b3666.
35 National Health & Medical Research Council (NHMRC). The Health Effects of Passive Smoking: A scientific information paper. 1997.
36 US Department of Health and Human Services. Children and Secondhand Smoke Exposure. Excerpts from The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Centre for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2007. Available from: http://www.surgeongeneral.gov/library/smokeexposure/report/fullreport.pdf [accessed 14 November 2010].
37 Mitchell EA. Recommendations for sudden infant death syndrome prevention: a discussion document. *Arch. Dis. Child.* 2007; **92**: 155–9.
38 Mitchell EA, Milerad J. Smoking and the sudden infant death syndrome. *Rev. Environ. Sci.* 2006; **21**: 81–103.
39 Fleming PJ, Blair PS. Sudden infant death syndrome and parental smoking. *Early Hum. Dev.* 2007; **83**: 721–5.
40 Hunt CE, Hauck FR. Sudden infant death syndrome. *Can. Med. Assoc. J.* 2006; **174**: 1861–9.
41 Kristiansen AL, Lande B, Overby NC, Andersen LF. Factors associated with exclusive breast-feeding and breast-feeding in Norway. *Public Health Nutr.* 2010; **13**: 2087–96.
42 Weiser TM, Lin M, Garikapaty V, Feyerharm RW, Bensyl DM, Zhu BP. Association of maternal smoking status with breastfeeding practices: Missouri, 2005. *Pediatrics* 2009; **124**: 1603–10.
43 Carpenter RG, Irgens LM, Blair PS *et al*. England PD, Fleming PJ, Huber J, Jorch G, Schreuder A. Sudden unexplained infant death in 20 regions in Europe: case control study. *Lancet* 2004; **363**: 185–91.
44 Scragg RKR, Mitchell EA, Stewart AW *et al*. Infant room-sharing and prone sleep position in sudden infant death syndrome. *Lancet* 1996; **347**: 7–12.
45 Tappin D, Ecob R, Stat S, Brooke H. Bedsharing, roomsharing, and sudden infant death syndrome in Scotland: a case-control study. *J Pediatr.* 2005; **147**: 32–7.
46 Blair PS, Fleming PJ, Smith IJ *et al*., the CESDI SUDI research group. Babies sleeping with parents: case-control study of factors influencing the risk of the sudden infant death syndrome. *Br. Med. J.* 1999; **319**: 1457–62.
47 Mitchell EA, Thompson JMD. Co-sleeping increases the risk of SIDS, but sleeping in the parents' bedroom lowers it. In: Rognum TO, ed. *Sudden Infant Death Syndrome: New Trends in the Nineties*. Oslo: Scandinavian University Press, 1995; 266–9.
48 McKenna JJ, McDade T. Why babies should never sleep alone: a review of the co-sleeping controversy in relation to SIDS, bedsharing and breastfeeding. *Paediatr. Respir. Rev.* 2005; **6**: 134–52.
49 Blair PS, Ward-Platt M, Smith IJ. Fleming PJ and the CESDI SUDI Research Group. Sudden infant death syndrome and the time of

death: factors associated with night-time and day time deaths. *Int. J. Epidemiol.* 2006; **35**: 1563–9.
50 Vennemann MM, Bajonowski T, Brinkmann B, Jorch G, Sauerland S, Mitchell EA. Sleep environment risk factors for sudden infant death syndrome: the German sudden infant death syndrome study. *Pediatrics* 2009; **123**: 1162–70.
51 Byard RW, Beal S, Bourne AJ. Potentially dangerous sleeping environments and accidental asphyxia in infancy and early childhood. *Arch. Dis. Child.* 1994; **71**: 497–500.
52 Australian Competition and Consumer Commission. *Keeping Baby Safe: A Guide to Nursery Furniture*. Most recently revised Sept 2008. Canberra: ACCC, Commonwealth of Australia, 2006. Available from: http://www.accc.gov.au [accessed 14 November 2010].
53 Byard RW. Ch 2 Accidents. In: Byard RW, ed. *Sudden Death in the Young*, 3rd edn. Cambridge: Cambridge University Press, 2010; 28–39.
54 Ponsonby AL, Dwyer T, Gibbons LE, Cochrane JA, Wang YG. Factors potentiating the risk of sudden infant death syndrome associated with the prone position. *N. Engl. J. Med.* 1993; **329**: 377–82.
55 Mitchell EA, Thompson JMD, Ford RPK, Taylor BJ. Sheepskin bedding and the sudden infant death syndrome. *J. Pediatr.* 1998; **133**: 701–4.
56 Byard RW, Beal SM. V-shaped pillows and unsafe infant sleeping. *J. Paediatr. Child Health* 1997; **33**: 171–3.
57 Hauck FR, Herman SM, Donovan M *et al*. Sleep environment and the risk of sudden infant death syndrome in an urban population: the Chicago Infant Mortality Study. *Pediatrics* 2003; **111**: (5 Pt 2):1207–14.
58 Limerick S. (Chair) *The Report of the Expert Group to Investigate Cot Death Theories: Toxic Gas Hypothesis*. London: Department of Health Final Report May 1998. 1998.
59 Mitchell EA, Fitzpatrick MG, Waters J. SIDS and the toxic gas theory revised. *N.Z. Med. J.* 1998; **111**: 219–21.
60 Escott A, Elder D, Zuccollo J. Sudden unexpected infant death and bed sharing: referrals to the Wellington Coroner 1997-2006. *N.Z. Med. J.* 2009; **122**: 59–68.
61 Hutchison BL, Rea C, Stewart AW, Koelmeyer TD, Tipene-Leach DC, Mitchell EA. Sudden Unexpected Infant Death in Auckland: a retrospective case review. *Acta Paediatr.* 2011; **100**: 1108–12.
62 Scragg R, Mitchell EA, Taylor BJ *et al*. Bedsharing, smoking and alcohol in the sudden infant death syndrome: results from the New Zealand cot death study. *Brit. Med. J.* 1993; **307**: 1312–18.
63 McGarvey C, McDonnell M, Hamilton K, O'Regan M, Matthew T. An eight-year study of risk factors for SIDS: bed-sharing vs. non bed-sharing. *Arch. Dis. Child.* 2006; **91**: 318–23.
64 Mitchell EA, Tuohy PG, Brunt JM *et al*. Risk factors for sudden infant death syndrome following the prevention campaign in New Zealand: a prospective study. *Pediatrics* 1997; **100**: 835–9.
65 Carroll-Pankhurst C, Mortimer EA Jr. Sudden infant death syndrome, bedsharing, parental weight, and age at death. *Pediatrics* 2001; **107**: 530–6.
66 Thompson JMD, Mitchell EA. Are the risk factors for SIDS different for preterm and term infants? *Arch. Dis. Child.* 2006; **91**: 107–11.
67 Blair PS, Platt MW, Smith IJ, Fleming PJ. 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**: 101–6.
68 Byard RW, Beal S, Blackbourne B, Nadeau JM, Krous HF. Specific dangers associated with infants sleeping on sofas. *J. Paediatr. Child Health* 2001; **37**: 476–8.
69 Ball HL. Bed-sharing practices of initially breasfed infants in the first 6 months of life. *Infant Child Dev.* 2007; **16**: 387–401.
70 McKenna JJ, Mosko SS, Richard CA. Bedsharing promotes breastfeeding. *Pediatrics* 1997; **100**: 214–19.
71 Young J. *Night-time behaviour and interactions between mothers and their infants of low risk for SIDS: a longitudinal study of room-sharing and bed sharing*. PhD thesis: Institute of Child Health, University of Bristol, 1999.
72 Gettler LT, McKenna JJ. Evolutionary perspectives on mother–infant sleep proximity and breastfeeding in a laboratory setting. *Am. J. Phys. Anthropol.* 2011; **144**: 454–62.
73 Horsley T, Clifford T, Barrowman N *et al*. Benefits and harms associated with the practice of bed sharing: a systematic review. *Arch. Pediatr. Adolesc. Med.* 2007; **161**: 237–45.
74 Blair PS. Perspectives on bed-sharing. *Curr. Pediatr. Rev.* 2010; **6**: 67–70.
75 Mosko S, Richard C, McKenna J. Maternal sleep and arousals during bedsharing with infants. *Sleep* 1997; **20**: 142–50.
76 Mosko S, Richard C, McKenna J. Infant arousals during mother-infant bed sharing: implications for infant sleep and sudden infant death syndrome research. *Pediatrics* 1997; **100**: 841–9.
77 Ball H. Parent-infant bed-sharing behaviour: effects of feeding type and presence of father. *Hum. Nat.* 2006; **17**: 301–18.
78 McKenna JJ, Ball HL, Gettler LT. Mother-infant co-sleeping, breastfeeding and sudden infant death syndrome: what biological anthropology has discovered about normal infant sleep and pediatric sleep medicine. *Yearb. Phys. Anthropol.* 2007; **50**: 133–61.
79 Baddock SA, Galland BC, Taylor BJ, Bolton BDP. Sleep arrangements and behavior of bed-sharing families in the home setting. *Pediatrics* 2007; **119**: e200–7.
80 Heron P. *Non-reactive co-sleeping and child behaviour: getting a good night's sleep, all night every night?* Undergraduate Thesis in the Department of Psychology, University of Bristol, 1994.
81 Okami P, Weisner T, Olmstead R. Outcome correlates of parent-child bedsharing: an eighteen-year longitudinal study. *J. Dev. Behav. Pediatr.* 2002; **23**: 244–53.
82 Brenner RA, Simons-Morton BG, Bhaskar B, Revenis M, Das A, Clemens JD. Infant-parent bedsharing in an inner-city population. *Arch. Pediatr. Adolesc. Med.* 2003; **157**: 33–9.
83 Rath FH, Okum ME. Parents and children sleeping together: cosleeping prevalence and concerns. *Am. J. Orthopsychiatry* 1995; **65**: 411–18.
84 McKenna JJ, Volpe LE. Sleeping with baby: an internet-based sampling of parental experiences, choices, perceptions, and interpretations in a western industrialised context. *Infant Child Dev.* 2007; **16**: 359–85.
85 Medoff D, Schaefer CE. Children sharing the parental bed: a review of the advantages and disadvantages of cosleeping. *Psychology* 1993; **30**: 1–9.
86 Germo GR, Chang ES, Keller MA, Goldberg WA. Child sleep arrangements and family life: perspectives from mothers and fathers. *Infant Child Dev.* 2007; **16**: 433–56.
87 Hooker E, Ball HL, Kelly PJ. Sleeping like a baby: attitudes and experiences of bedsharing in northeast England. *Med. Anthropol.* 2001; **19**: 203–22.
88 Hutchison BL, Stewart AW, Mitchell EA. SIDS protective infant care practices among Auckland mothers. *N.Z. Med. J.* 2006; **119**: 1–10.
89 Mitchell EA. Bed sharing and the risk of sudden infant death: parents need clear information. *Curr. Pediatr. Rev.*2010; **6**: 63–6.
90 Young J. Bedsharing with babies: the facts. *RCM Midwives J.* 1998; **1**: 338–41.
91 Royal College of Midwives. *Bedsharing and Co-Sleeping. Position Statement No. 8.* London: The Royal College of Midwives, 2004.
92 Royal College of Midwives. *Bedsharing and Co-Sleeping. Guidance Paper No. 1*. London: The Royal College of Midwives, 2007.
93 Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #6: guideline on co-sleeping and breastfeeding. Revision, March 2008. *Breastfeed. Med.* 2008; **3**: 38–43.

94 Gettler LT, McKenna JJ. Never sleep with baby? Or keep me close but keep me safe: eliminating inappropriate 'Safe Infant Sleep' rhetoric in the United States. *Curr. Pediatr. Rev.* 2010; **6**: 71–7.
95 The Australian Immunisation Handbook. 9th edn. Department of Health and Ageing, Australian Government, Canberra, 2008.
96 SIDS and Kids. *Information Statement: Immunisation*. Melbourne: SIDS and Kids, 2008; Available from: http://www.sidsandkids.org/wp-content/uploads/Immunisation_2008_04_Cit-sugg.pdf (accessed 11 October 2011).
97 Hoffman HJ, Hunter JC, Damus K *et al*. Diphtheria-tetanus-pertussis immunization and sudden infant death: results of the National Institute of Child Health and Human Development Cooperative Epidemiological Study of Sudden Infant Death Syndrome risk factors. *Pediatrics* 1987; **79**: 598–611.
98 Mitchell EA, Stewart AW, Clements M, Ford RPK. Immunisation and the sudden infant death syndrome. *Arch. Dis. Child.* 1995; **73**: 498–501.
99 Vennemann MM, Butterfass-Bahloul T, Jorch G *et al*. GeSID Group. Sudden infant death syndrome: no increased risk after immunization. *Vaccine* 2007; **25**: 336–40.
100 Vennemann MM, Höffgen M, Bajanowski T, Hense HW, Mitchell EA. Do immunisations reduce the risk for SIDS? A meta-analysis. *Vaccine* 2007; **25**: 4875–9.
101 Chen A, Rogan WJ. Breastfeeding and the risk of postneonatal death in the United States. *Pediatrics* 2004; **113**: e435–9.
102 Ford RPK, Taylor BJ, Mitchell EA *et al*. Breastfeeding and the risk of sudden infant death syndrome. *Int. J. Epidemiol.* 1993; **22**: 885–90.
103 Wennergren G, Alm B, Oyen N *et al*. The decline in the incidence of SIDS in Scandinavia and its relation to risk intervention campaigns. Nordic Epidemiological SIDS Study. *Acta Paediatr.* 1997; **86**: 963–8.
104 Brooke H, Gibson A, Tappin D *et al*. Case-control study of sudden infant death syndrome in Scotland, 1992–1995. *Brit. Med. J.* 1997; **314**: 1516–20.
105 Vennemann MM, Findeisen M, ButterfassBahloul T *et al*. Modifiable risk factors for SIDS in Germany: results of GeSID. *Acta Paediatr.* 2005; **94**: 655–60.
106 Ip S, Chung M, Raman G, Trikalinos TA, Lau J. A summary of the Agency for Health Care Research and Quality's evidence report on breastfeeding in developed countries. *Breastfeed. Med.* 2009; **4**: S-17–30. doi:10.1089/bfm.2009.0050.
107 McVea KL, Turner PD, Peppler DK. The role of breastfeeding in sudden infant death syndrome. *J. Hum. Lact.* 2000; **16**: 13–20.
108 Mitchell EA, Taylor BJ, Ford RP *et al*. Dummies and the sudden infant death syndrome. *Arch. Dis. Child.* 1993; **68**: 501–4.
109 Fleming PJ, Blair PS, Pollard K *et al*. Pacifier use and sudden infant death syndrome: results from the CESDI/SUDI case control study. CESDI SUDI Research Team. *Arch. Dis. Child.* 1999; **81**: 112–16.
110 McGarvey C, McDonnell M, Chong A, O'Regan M, Matthews T. Factors relating to the infant's last sleep environment in sudden infant death syndrome in the Republic of Ireland. *Arch. Dis. Child.* 2003; **88**: 1058–64.
111 Li DK, Willinger M, Petitti DB, Odouli R, Liu L, Hoffman HJ. Use of a dummy (pacifier) during sleep and risk of sudden infant death syndrome (SIDS): population based case-control study. *Brit. Med. J.* 2006; **332**: 18–22.
112 Marter A, Agruss JC. Pacifiers: an update on use and misuse. *J. Spec. Pediatr. Nurs.* 2007; **12**: 278–85.
113 Hauck FR, Omojokun OO, Siadaty MS. Do pacifiers reduce the risk of sudden infant death syndrome? A meta-analysis. *Pediatrics* 2005; **116**: e716–23.
114 Mitchell EA, Blair PS, L'Hoir MP. Should pacifiers be recommended to prevent SIDS? *Pediatrics* 2006; **117**: 1755–8.
115 Hauck FR, Tanabe KO. International trends in sudden infant death syndrome: stabilization of rates requires further action. *Pediatrics* 2008; **122**: 660–6.
116 Australian Health Ministers' Advisory Council. *Aboriginal and Torres Strait Islander Health Performance Framework Report 2008 Summary*, AHMAC, Canberra, 2008.
117 Eades SJ, Read AW, the Bibbulung Gnarneep Team. Infant care practices in a metropolitan Aboriginal population. *J. Paediatr. Child Health* 1999; **35**: 542–4.
118 Freemantle CJ, Read AW, de Klerk NH, McAullay D, Anderson I, Stanley FJ. Patterns, trends and increasing disparities in mortality for Aboriginal and non-Aboriginal infants born in Western Australia, 1980-2001: population database study. *Lancet* 2006; **367**: 1758–66.
119 International Society for the Study and Prevention of Perinatal and Infant Death (ISPID). How to keep your baby healthy and reduce the risk of Sudden Infant Death (SIDS). 2009. Available from: http://www.ispid.org/prevention.html (accessed 10 May 2011).
120 Farrar E. Working with culturally and linguistically diverse (CALD) families. *Childcare Children's Health* 2007; **10**: 1–6.


SUDI PREVENTION LOGIC
a 'whole of community' approach to protecting infant life and promoting resilience, especially in more vulnerable infants
Needs
What we are responding to.
Actions
What activities we will undertake.
Impact
What measurable effects we will achieve..
Outcomes
What health outcomes we can assume.
Evidence of higher SUDI rates for babies with developmentally unfavourable pregnancy, sleeping or family conditions.
Triple risk understanding of SUDI predisposition: critical developmental stage, vulnerable infant, external stressor.
Main risk factors are: non-supine sleeping (most dangerous), smoke exposure in pregnancy (most common) and an asphyxia hazard in the sleeping environment .
Well established major protective factors of sleeping: 'face up + face clear + smokefree' and 'always in own baby bed' for babies of mothers who smoked in pregnancy. Also, breastfed and close by.
Inequalities for Maori and Pacific babies in terms of health and survival as well as in terms of exposure to and knowledge of established risks
Need for change strategies that focus on increased protection for priority babies and
• Align practice with evidence
• Grow networks of influence within priority groups
• Promote approaches that those in priority groups value
By health/well child/early intervention providers:
Implement the Safe Sleep ABC with all.
• Ask everyone about safe sleep conditions (position, place, smokefree)
• Be clear about what protects, babies from sudden infant death and why
• Check support and refer as appropriate (eg to smokefree or baby bed servic ...)
By smoking cessation providers:
implement pregnancy specific programmes that include male partners.
• Include CO testing for bio-feedback
• Discuss costs and benefits of NRT use in pregnancy vs continued smoking
• Support smokefree practice days and actions as steps to smokefree change
By SUDI Prevention service providers:
• Support strategic planning activities at Ministry, regional, agency and service levels
• Provide national information and advisory services for Maori, Pacific and mainstream audiences
• Coordinate networks of Safe Sleep champions in priority contexts, regions and groups
• Lead the development of safe sleep enabling approaches for priority groups
On awareness
• DHB surveys report high rates (100%)of awareness of safety conditions in Maori and Pacific communities (face-up, face clear, smokefree, own bed, breastfed, close by)
On positioning
• Audits reveal 100% of new-borns in DHB facilities, observed asleep on backs (less exceptions for medical reasons)
• Well child audits reveal 100% babies sleeping supine at 4 wks and 3 mths
On smokefree pregnancies
• DHBs report reducing rates of smoking before, during and after pregnancy , especially for Maori and Pacific
On sleep environments
• Well child services report 100% of smoke-exposed babies sleeping in their own baby bed at 4 weeks and 3 months
On other conditions
• DHBs report increasing rates of breastfeeding in priority groups
• Well child providers report 100% of babies sleeping in the same room as an adult at 4 weeks and 3 months
For infant health
• An end to preventable sudden infant deaths
• Reduced hospital admissions for babies under 1 year
• Reduced frequency and seriousness of illness for infants
For infant development
• More NZ babies developing in age appropriate conditions, before and after birth
• Strengthened early attachment between baby and parent
• Greater participation by babies in social and physical pursuits
For NZ society
• An equal chance for babies to survive and thrive across all communities
• A reduced disproportionate burden of grief on Maori and Pacific families
• Benefits for all from living in a more equitable society
For vote health
• More funds for other health priorities for children
• Improved health status relative to other OECD countries due to improved IMR
Prepared by Change for our Children (Jan 2012)