LA TROBE UNIVERSITY

All kinds of clever

Safe Sleep Space Project Report of Findings

Adamm Ferrier

30th August 2019

River's Gift Stamp Out SIDS

SafeSleepSpace

SOTERIA SAFE SLEEPING ADVICE

LA TROBE UNIVERSITY

Acknowledgement of country

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. In particular we pay tribute to the Wurundjeri people of the Kulin nation and pay our respects to their Elders past, present and emerging.

Who are we?

- Ms Cindy Davenport (Safe Sleep Space)
- Ms Melissa Grant (Safe Sleep Space)
- Ms Jill Green (Soteria Safe Sleeping Advice)
- Ms Alexandra Hamilton (River's Gift)
- Mr Karl Waddell (River's Gift)
- Adamm Ferrier (Chief Investigator, La Trobe University)

Assistance with analysis

- Dr Matthew Ruby (La Trobe University)

Why did we do our project?

Parents and caregivers should be educated about the need to sleep the baby supine.

(Recommendation 7)

What do parents and caregivers currently know about safe sleeping principles?

How do parents and caregivers want to receive information about safe sleeping principles?

Why is it of interest to Maternal & Child Health Nurses and Midwives?

How/where do people want to **get** information?

We found that current or prospective parents who responded to our survey ranked sources as follows

- Internet resources (61.9%)
- Maternal & Child Health Nurses (52.8%)
- Midwives (49.2%)
- General Practitioners were relatively low on their radar

How would you like to learn more about safe sleeping practices? (Current or prospective parents)

	Yes	Maybe
Reading information on the internet	61.9%	56.5%
Speaking with my maternal and child health nurse	52.8%	48.7%
Speaking with my midwife	49.2%	36.4%
Reading information on a phone app	48.9%	41.2%
Reading information via a printed brochure	44.2%	33.1%
Reading information via social media	39.6%	33.8%
Completing an online module on a website	38.1%	20.5%
Speaking with my general practitioner	36.1%	26.3%
Attending a formal class or seminar	29.8%	10.7%
Reading a magazine article	25.4%	18.2%
Reading information via an informal community forum	16.2%	13.3%

How would you like to learn more about safe sleeping practices? (all respondents)

	Yes	Maybe
Reading information on the internet	59.3%	58.1%
Speaking with my maternal and child health nurse	48.8%	45.2%
Reading information on a phone app	45.6%	36.4%
Speaking with my midwife	43.4%	35.2%
Reading information via a printed brochure	42.2%	32.7%
Reading information via social media	38.5%	31.3%
Completing an online module on a website	37.2%	22.3%
Speaking with my general practitioner	26.5%	22.9%
Attending a formal class or seminar	26.1%	11.0%
Reading a magazine article	23.6%	17.0%
Reading information via an informal community forum	14.4%	11.9%

What were the problems?

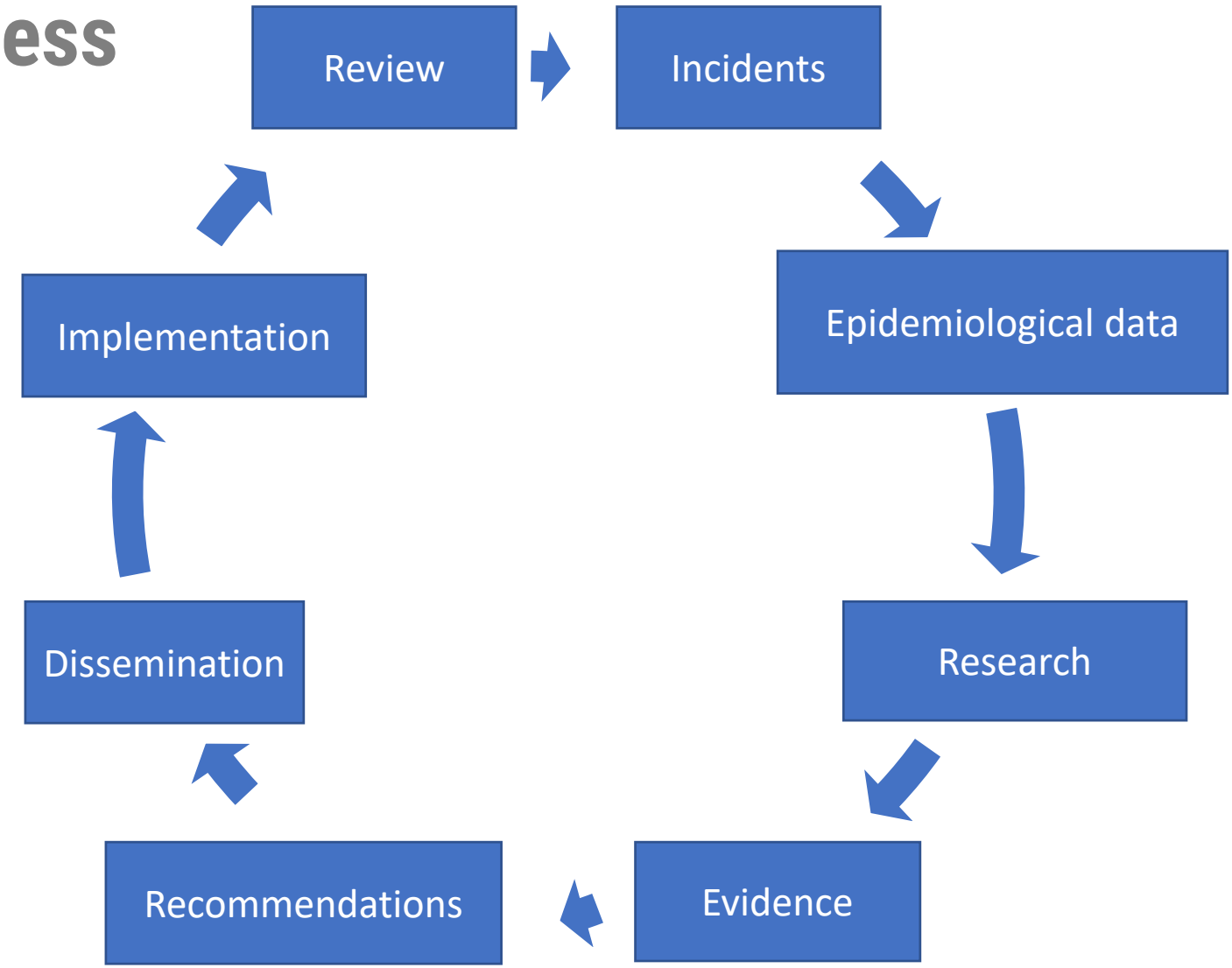
- The incidence of reported Sudden Infant Death Syndrome (SIDS) in Australia peaked at 525 deaths in 1987
- Reduced considerably since that time
- Australian federal and state governments, interest groups and health professionals promote evidence based recommendations to prevent SUDI
- There is a gap in the literature regarding acquisition of knowledge to the target groups

Data challenges

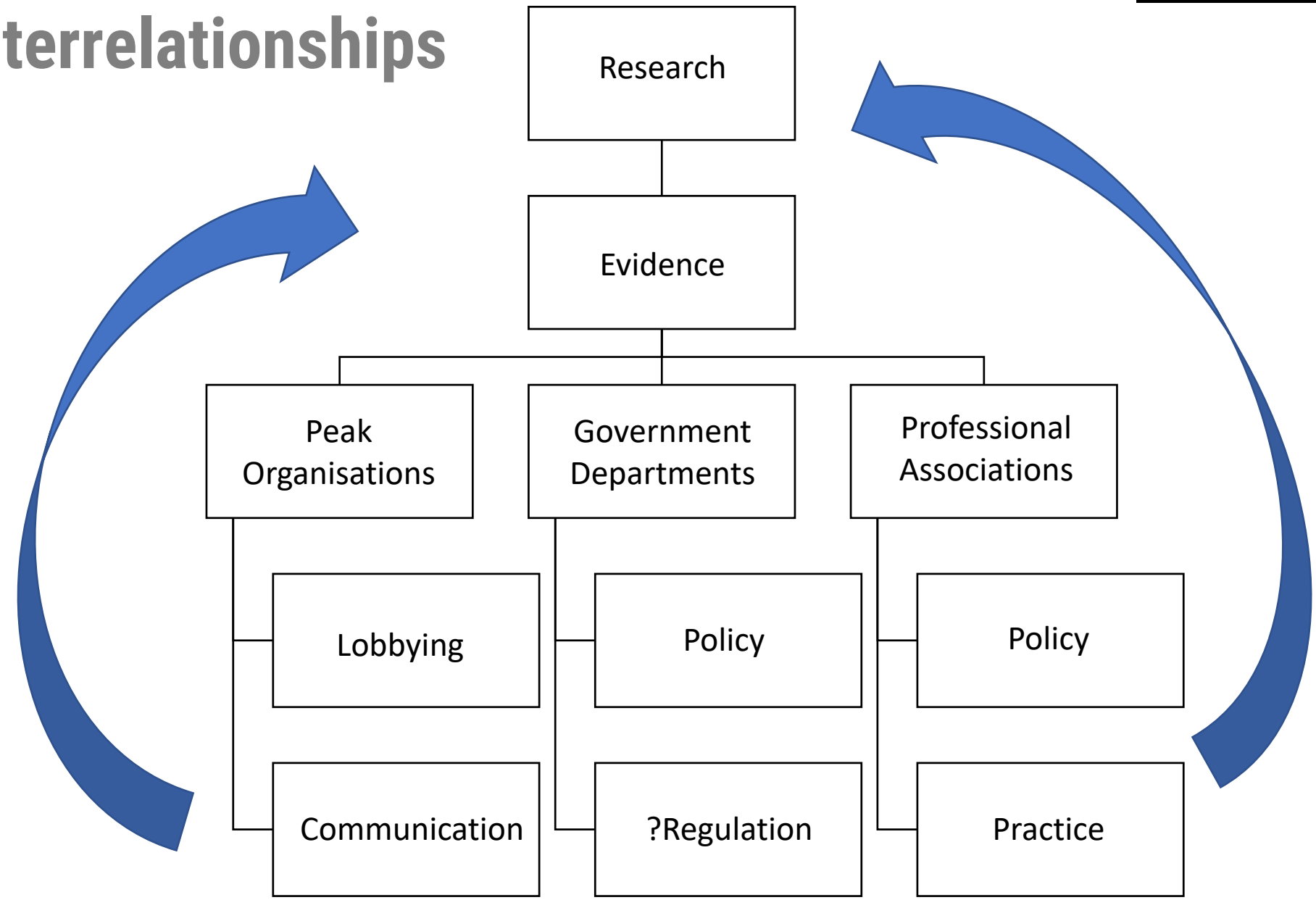
There have been changes in

- the way in which data has been recorded since 1985
  - Latest change in 2014 by the ABS
- how state authorities have classified deaths
- changes in definitions

Public Health Process

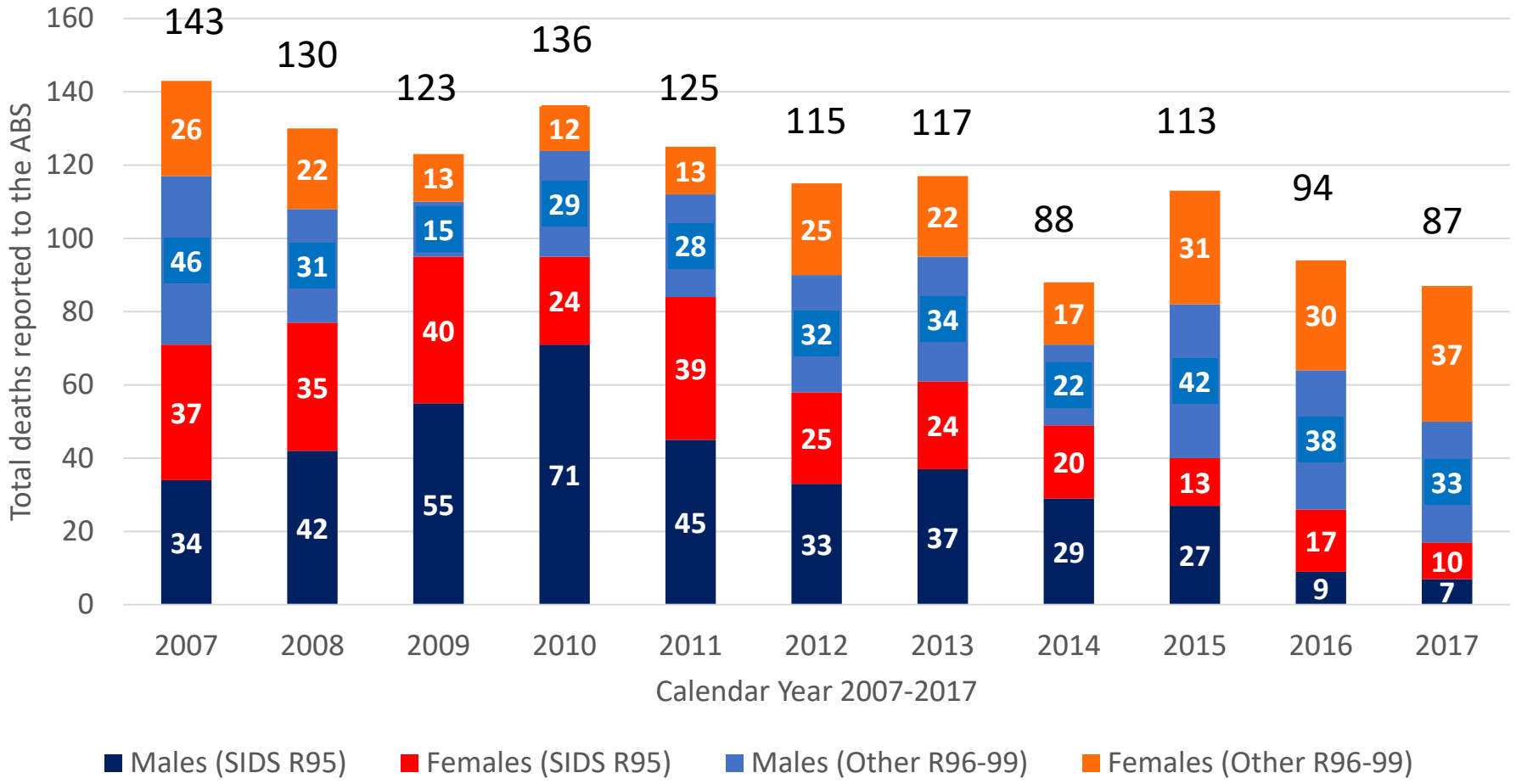


Interrelationships



Potentially preventable Deaths in Australia

attributed to SUDI 2007-2017 (R95 SIDS, R96-99 others)



Extracted from ABS3303.0 Causes of Death, Australia, 2017 Tables 1.2 & 1.3
Underlying cause of death, All causes, Australia, 2008–2017

LA TROBE UNIVERSITY

All kinds of clever

There were 19 recommendations that aim to reduce risk

- 13 recommendations that were within parental control
  - All were supported by level III-2 evidence
- The remaining six were deemed out of scope for our questionnaire
  - 2 were in relation to swaddling & sleeping bags
  - 2 were in relation to midwifery (neonatal) practices
  - 1 related to co-sleeping of twins
  - 1 related to immunisation

We chose recommendations that were within parental control (1)

- R1 All infants under 6 months of age should **sleep in their own cot** and **not share a sleeping surface** with a parent, caregiver or child.
- R2 Parents should be advised of the **risks of bed sharing** with their infant even if they do not smoke or drink alcohol and the infant is breast fed, if the infant is under three months of age.
- R3 **Bed sharing if parents smoke, drink alcohol or take drugs** is particularly dangerous and parents should be warned of the significantly increased risk of infant suffocation.
- R4 Parents should be advised that **sleeping on a sofa** with an infant significantly increases the risk for SUDI and should **always be avoided**.

Horne, R. S., et al. (2013). Literature Review and Recommendations for Safe Infant Sleeping. R. Centre. Melbourne, Monash University.

We chose recommendations that were within parental control (2)

- R5 All infants should be **slept in their own cot in the parental** or adult caregiver bedroom until at least 6 months of age and preferably until 12 months.
- R6 **All infants should be placed on their back to sleep**
- R7 **Parents and caregivers should be educated** about the need to sleep the baby supine.
- R8 All infants should be put to sleep with their **head uncovered**.
- R9 Parents should be advised to **avoid** the use of any **loose or soft bedding** that could cover the infant's face and not to use doonas, pillows, or cot bumpers, and not to place toys in the cot.

Horne, R. S., et al. (2013). Literature Review and Recommendations for Safe Infant Sleeping. R. Centre. Melbourne, Monash University.

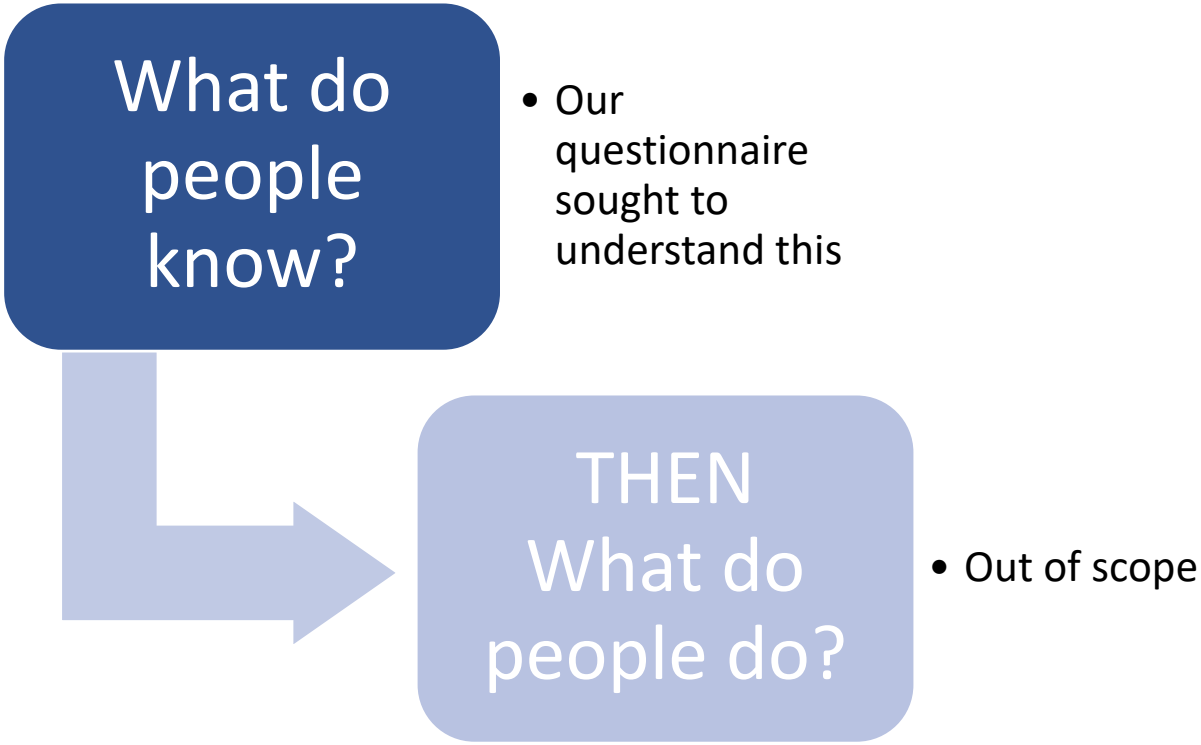
We chose recommendations that were within parental control

- R10 Parents should be advised to **sleep their infant at the foot of the cot** to reduce the risk of accidental head covering by bedding.
- R12 Infants should be kept in a **smoke free environment**.
- R13 Mothers who wish to **breast feed** their infant should be **encouraged and assisted** to do so.
- R18 Parents should be made aware that the **routine use of a dummy is protective** against SIDS, however it is important to establish breast feeding first for 3-4 weeks.

Horne, R. S., et al. (2013). Literature Review and Recommendations for Safe Infant Sleeping. R. Centre. Melbourne, Monash University.

Our research question

To what extent are people aware of evidence-based safe sleeping practices for infants up to 12 months of age?



Our hypotheses

To what extent are people aware of evidence-based safe sleeping practices for infants up to 12 months of age?

H_1 That there is a difference in knowledge according to **sex**

H_2 That there is a difference in knowledge according to **age**

H_3 That there is a difference in knowledge according to **level of education**

H_4 That there is a difference in knowledge according to a **person being a health professional**

H_5 That there is a difference in knowledge according to a **person's partner being a health professional**

The null hypothesis H_0 for each was no statistical difference associated with each sub-hypothesis, with a *p value* of .05 as being considered statistically significant.

Method

- Audit of existing online information sources within Australia (2018)
- Purposive and opportunistic recruitment strategy
  - Seeking persons affected by the issue
  - Use of existing social media networks
  - Invitation using commercial mailing lists (for which we paid)
- Online questionnaire
  - Demographical information
  - Attitudinal questions using Likert modified forced choice
  - Some free text
  - Separate database for those wishing to receive results, cross-referencing disabled
- Ethical oversight provided by La Trobe University HREC (HEC18051)
- Survey opened 2 April 2018 and closed 30 September 2018

Ethical considerations

- Possibility existed that respondents might have been using the questionnaire to further their knowledge
  - Questions were always framed so the recommendations were “true”
  - Mindful of the risk of propagating or creating misconceptions
  - This may have created a systematic positive bias within the responses, but on the other hand the risk (we felt) was far too great to use “incorrect” information

Q ~~Babies should be slept prone~~

☑Strongly agree	Agree	Disagree	Strongly Disagree	Unsure	Prefer not to answer

- One exception – we explored the consequential issue regarding sleeping a healthy child on their back with respect to the fear that this increases the likelihood of choking.

Results

Reminder

- The survey was **not** designed to test whether people ***complied*** with the recommendations (this is rightly an outcome of this exercise)
- We are not defending the recommendations *per se* – the point of the questionnaire was to test whether people agreed with them.
- We wanted to understand whether - in general - people agreed with the recommendations or not

Information available on the internet

We also commissioned a Masters student to examine available online resources. They located 70 different online documents/web pages, but we acknowledge that this is a dynamic situation

Sources

- 46 from government sites (including hospitals) (66%)
- 20 from interest groups, including 4 from the peak body "Red Nose" (29%)
- 2 from professional associations (3%)
- 2 from "commercial" sites (3%)

Target Audience

- Caregivers/Parents 51 (73%)
- Providers 19 (27%)

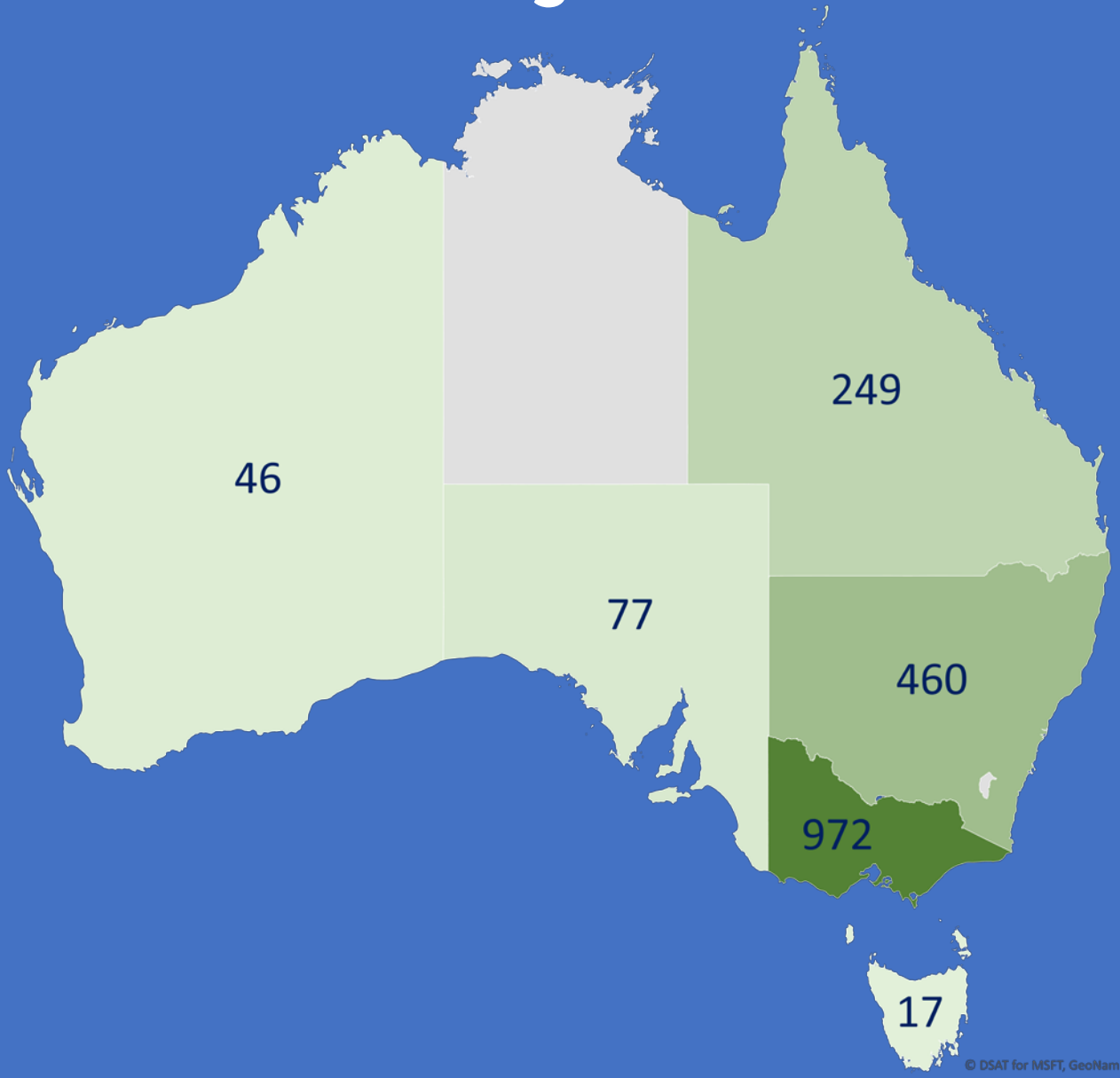
Outcome

No online document included all the recommendations listed in Horne, R. S., et al. (2013). Literature Review and Recommendations for Safe Infant Sleeping. R. Centre. Melbourne, Monash University.

Questionnaire Demographics

- 178K invitations via email were sent out on our behalf
- 2090 responses (1.2% response rate)
  - Responder bias (but this is not necessarily a bad thing)
  - Those that were interested responded
  - The owner of the databases would not permit “reminder emails”
- We excluded 47 respondents
  - Majority excluded from overseas
  - Some had repeated the survey
  - Some incomplete surveys or vexatious responses
- Of the remaining respondents
  - 1251 self identified as prospective or current parents of children under 12 months of age
  - 787 identified **as not being** prospective or current parents of children under 12 months of age

Respondents according to residence



Cultural identification

- The majority of respondents identified their cultural heritage as “Australian” (55.8%)
- Another 15.1% identified as Australian with additional cultural heritage
- Less than 1% identified as having an Indigenous cultural heritage
- 28% identified as having a cultural heritage other than Australian
  - 10.7% identified as having a European heritage
  - 7.7% identified as having a SE Asian heritage (inc China)
  - 9.2% identified other heritage

Implications

There is ample opportunity **and need** to find ways of understanding the perspectives of indigenous and CALD communities

- need to partner with interested groups
- Online questionnaires often not appropriate for these groups

Main recommendation – supine sleeping

- 98.64% of prospective or current parents and 97.02% of all other respondents **agree** that a baby that cannot roll on its own should be slept in a supine position.
- There is less agreement, and greater uncertainty whether a baby with reflux should be placed on its back to sleep (it should)
  - Prospective and current parents were more unsure 16.25% compared to others 13.12%
  - Prospective and current parents were less likely to disagree 9.21% compared to others 13.12%
  - **No statistically significant difference between the two cohorts**
- With respect to whether placing a child on its back to sleep increased the risk of choking (it doesn't)
  - Prospective and current parents were **more unsure** 7.90% compared to others 5.20%
  - Prospective and current parents equally **agreed** 5.33%
  - **No statistically significant difference between the two cohorts**

Practice Implication

There are opportunities to find ways of promoting this protective information for M&CH Nurses

Second recommendation –sleeping in same room as parents

- 92.5% of prospective or current parents bit only 86.5% of all other respondents **agreed** that a baby should be sleep in its own sleeping space crib/cot/bassinet. *(X^2_2= 29.61, p<.001)*
- There is **less agreement** that that the crib/cot/bassinet should be in the same room as the sleeping parents
  - Prospective and current parents were **more** likely to agree 89.1% compared to others 85.6%
  - Prospective and current parents were less likely to be unsure 1.8% compared to others 2%
  - Prospective and current parents were less likely to disagree 9% compared to others 11.5%
  - Reflects disagreement arising from co-sleeping (bed sharing) experience of older parents
  - **No statistically significant difference between the two cohorts**

Practice Implication

There may be challenges in discussing this issue with prospective parents: suggests prospective strategies associated with exhaustion management are valued

Where is the greatest uncertainty?

- That the (habitual) use of dummies was protective against SIDS
  - Prospective and current parents were more unsure 40.7% compared to others 36.3%
  - Prospective and current parents were more likely to agree 34.4% compared to others 32.2%
  - **Statistically significant difference between cohorts** *($X^2_2 = 10.71, p<.001$)*
- That breastfeeding was protective against SIDS
  - Overall, people tended to agree, but
  - Prospective and current parents were less likely to agree 69.8% compared to others 74.9%
  - Prospective and current parents were less likely to disagree 6.5% compared to others 7.8%
  - Prospective and current parents were more likely unsure 23.7% compared to others 17.3%
  - **Statistically significant difference between cohorts** *($X^2_2 = 12.24, p<.001$)*
  - The higher the income level, the more likely that there was disagreement

Practice Implication

There are opportunities to find ways of promoting this protective information for M&CH Nurses

Where is the greatest disagreement?

- Co-sleeping (sharing **a bed** with a baby) should not occur
  - Although there was overall acceptance of the recommendation
  - Prospective and current parents were more likely to agree 72.6% compared to others 65.4%
  - Prospective and current parents were more unsure 4% compared to others 2.8%
  - Prospective and current parents were less likely to disagree 23.5% compared to others 31.7%
  - **Significant difference between the cohorts** *($X^2_2 = 17.34, p<.001$)*
  - In the written comments there was considerable discussion about the merits of co=-sleeping
  - Some argued from an anthropomorphic position, citing James McKenna PhD
  - Others identified the practicality with respect to breast feeding and the mitigating benefits of promoting maternal bonding
  - Others identified the aspects of maternal exhaustion and in some cases desperation

Practice Implication

That evidence based co-sleeping (sharing a bed) recommendations to minimise risk are preferable to “prohibition”, and that the lived experience of mothers is critically important and should not be ignored

Yet

- Co-sleeping (sharing **a chair or sofa or recliner etc** with a baby) should not occur
  - Overall there was overall far greater acceptance of the recommendation
  - Prospective and current parents were less likely to agree 90.8% compared to others 92.6%
  - Prospective and current parents were more unsure 2.9% compared to others 1.8%
  - Prospective and current parents were more likely to disagree 6.3% compared to others 5.6%
  - **No statistically significant difference between the two cohorts**

Practice Implication

That evidence based co-sleeping (sharing **a chair or sofa or recliner etc**) recommendations to minimise risk are generally accepted by the respondents.

A clear distinction needs to be made between the two differing circumstances

Acceptance

- All the other recommendations had a higher than 90% acceptance in both prospective or current parents and others.
  - **No statistically significant difference between the two cohorts**
- Nearly everyone agrees that (>99%)
  - Babies should not be exposed to tobacco (or other recreational) smoke
  - Babies should sleep with their heads and faces uncovered
- Other strong agreement (>90%)
  - If using sheets & blankets, these should be tucked in securely below the baby's shoulders to avoid covering the baby's face
  - Pillows, doonas, duvets, comforters, eiderdowns, bumpers or any other soft coverings should not be used in the infant's sleeping place
  - There should be no toys (soft or hard) or any other loose items in the baby's sleeping place
  - A baby should sleep on a firm mattress in its own sleeping place (such as a cot/bassinet/portable cot)
  - A baby should be placed so that its feet are at the foot (bottom) of the mattress if you are using sheets and blankets.
  - Parental use of alcohol or recreational drugs may significantly increase the risk of SIDS and sleeping accidents

Practice Implication

These recommendations have general acceptance.

Hypothesis testing

Results

- H_1 That there is a difference in knowledge according to sex
  - The vast majority of persons completing the survey were women. Inferential test using ANOVA, women were more likely to agree with more of the guidelines than men (*p<.001)*
- H_2 That there is a difference in knowledge according to age
  - A one way ANOVA did **not** reveal significant differences in knowledge by age group, but did indicate the lowest age group had the least knowledge.
  - To be expected because of the responder bias
- H_3 That there is a difference in knowledge according to level of education
  - As to be expected, those having attained higher education tended to agree with more of the recommendations (Bachelors degree & higher differed from those with TAFE & "lower" education levels)
- H_4 That there is a difference in knowledge according to a person being a health professional
  - We found that there was a significant difference if the respondent was a health professional (p<.001)

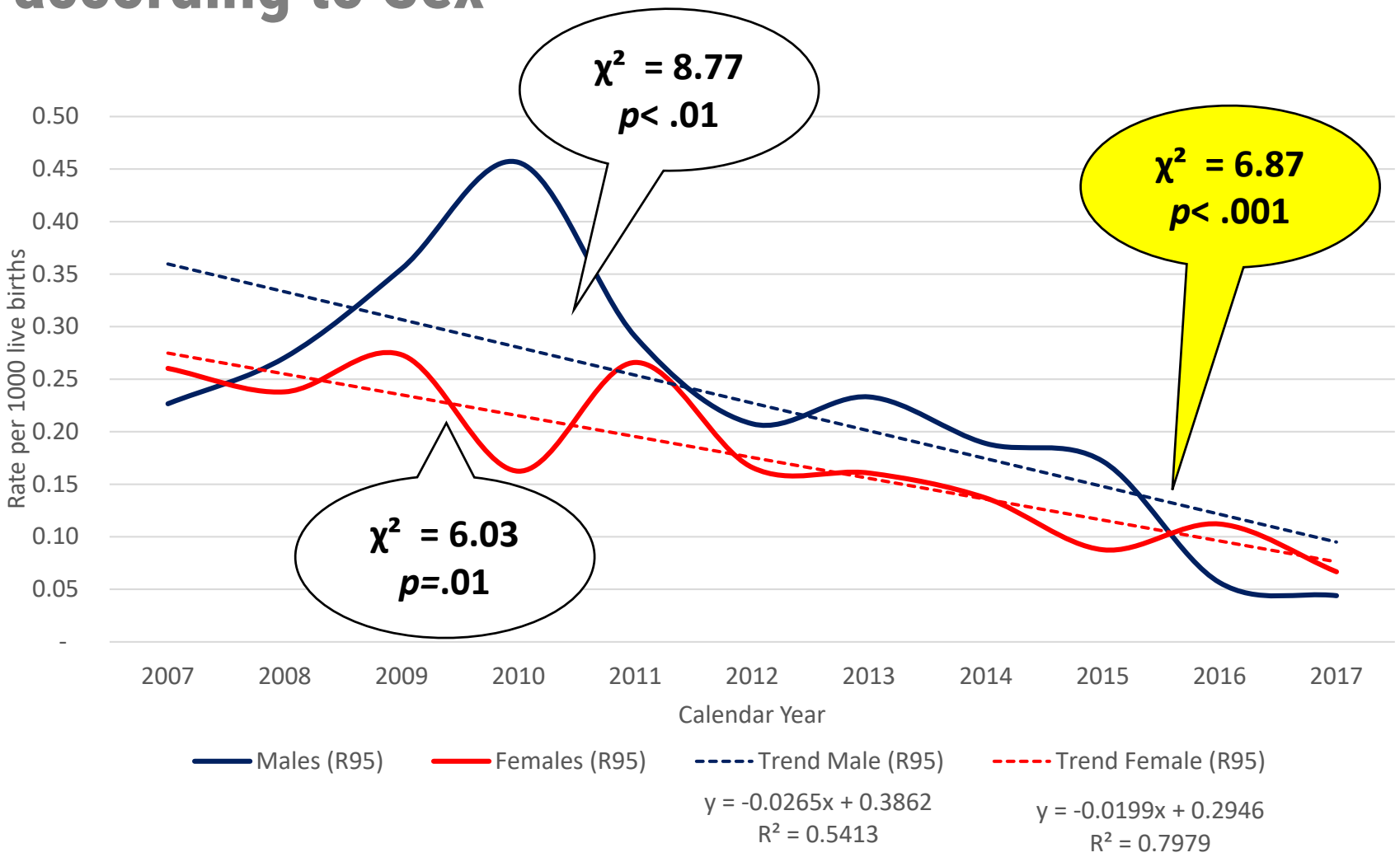
Other findings

- H_5 That there is a difference in knowledge according to a person's partner being a health professional
  - No significant difference

In addition

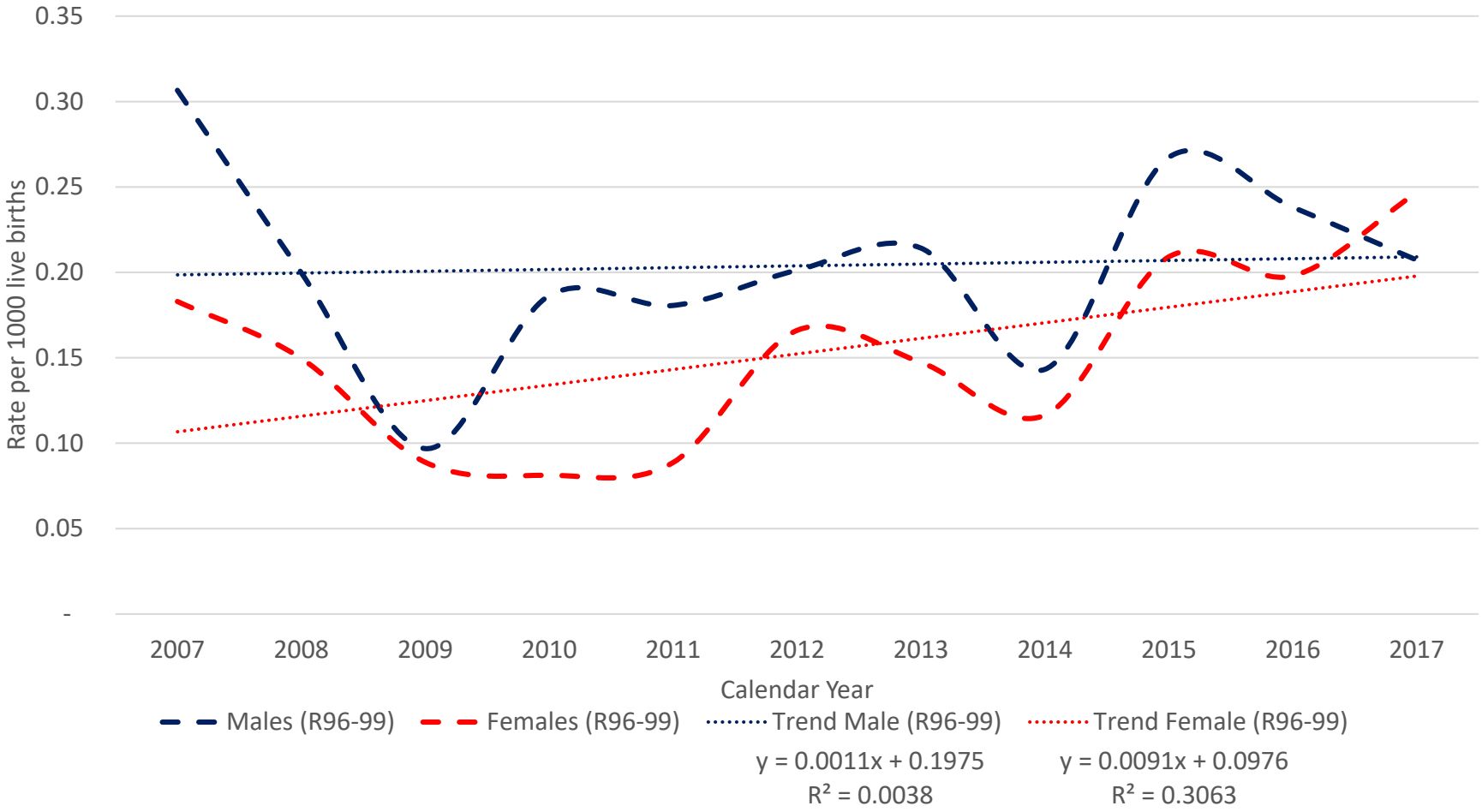
- That there is **no difference** in agreement according to residential location
  - we did not find any statistical difference on concordance based on locality (Metropolitan, Inner regional, outer regional). (p=.46)
- That there is **no difference** in agreement regarding Victorian respondents compared with those living elsewhere in the country
  - suggests that the Victorian recommendations do not differ significantly to other jurisdictions
- **But** there are differences in agreement with the recommendations according to estimated household gross income levels
  - We found that there was a significant difference in concordance scores if the household estimated gross income was below $71K per annum

Death Rate per 1000 live births SIDS (R95) according to Sex



Source: ABS (2018) 3301 Tables 1.2 Underlying cause of death, Selected causes by age at death, numbers and rates, Australia, 2017

Death Rate per 1000 live births non SIDS (R96-99) according to Sex



Source: ABS (2018) 3301 Tables 1.2 Underlying cause of death, Selected causes by age at death, numbers and rates, Australia, 2017

What position is the safest for a baby that cannot roll on its own to sleep?

	Prospective or Current Parents		Others	
On its back (face up)	1233	98.5%	768	97.6%
On its front (face down)	3	0.2%	4	0.5%
On its side	5	0.4%	11	1.4%
Unsure	11	0.9%	4	0.5%
Total	1252		787	

No statistically significant difference supine/other

Which of the following may be safely left with a sleeping baby?

	Prospective or Current Parents		Others	
Nothing loose should be left in the crib*	1157	92.4%	717	91.1%
Comforter	54	4.3%	40	5.1%
Crocheted Quilt	20	1.6%	11	1.4%
Other	19	1.5%	12	1.5%
Unsure	17	1.4%	4	0.5%
Bumper	13	1.0%	9	1.1%
Doona/Duvet	8	0.6%	8	1.0%
Hard toys	7	0.6%	12	1.5%
Pillows	6	0.5%	3	0.4%
Soft Toys	6	0.5%	8	1.0%
Loose blankets	5	0.4%	8	1.0%
Loose sheets	3	0.2%	6	0.8%
Eiderdown	2	0.2%	3	0.4%

(* = desired answer)

No statistically significant difference between desired response/other

Open to more information?

- At the very beginning of the survey we asked people how much they already knew about safe sleeping practices (prior knowledge).
- At the end of the survey we asked people whether they would like more information about safe sleeping practices; the options being yes, perhaps, and no (openness to more information)
- We used a one-way ANOVA to examine differences in prior knowledge compared to whether they were open **to more information.**
  - Those who stated that they did *not* want further information reported that they felt they knew more about safe sleeping practices at the commencement of the survey (M=4.46, SD=0.73, the “base group”)
  - than those who were possibly open to more information (M=4.15, SD=0.84), p<.001,
  - while those who wanted more information reported knowing even less (M=3.94, SD=0.98), p<.001).
- Conclusion: those who did not want more information at the end of the survey tended to be more confident in their knowledge at the start of the survey.

But…

We then **compared the same three groups on their overall concordance score.**

- A one-way ANOVA did **not** reveal significant differences between the groups, F (2,1945) = 1.64, p=.20
  - wanted to know more: M=17.29, SD=1.86;
  - maybe wanted to know more M=17.22, SD=1.74; and
  - those who did not want to know more M=17.12, SD=1.80.
- Those who *did not want more information* to supplement their knowledge of safe sleeping practices did not have any meaningful difference in their concordance scores with the other groups.
- We then correlated self reported prior knowledge with their concordance score
- The two were modestly and positively correlated $r= .29, p<.001$
- This suggests that the **self assessment of knowledge was only partially accurate**. Most people agreed with most of the recommendation without much variance.
- So from where do people want to secure information?

How would you like to learn more about safe sleeping practices? (Current or prospective parents)

	Yes	Maybe
Reading information on the internet	61.9%	56.5%
Speaking with my maternal and child health nurse	52.8%	48.7%
Speaking with my midwife	49.2%	36.4%
Reading information on a phone app	48.9%	41.2%
Reading information via a printed brochure	44.2%	33.1%
Reading information via social media	39.6%	33.8%
Completing an online module on a website	38.1%	20.5%
Speaking with my general practitioner	36.1%	26.3%
Attending a formal class or seminar	29.8%	10.7%
Reading a magazine article	25.4%	18.2%
Reading information via an informal community forum	16.2%	13.3%

How would you like to learn more about safe sleeping practices? (all respondents)

	Yes	Maybe
Reading information on the internet	59.3%	58.1%
Speaking with my maternal and child health nurse	48.8%	45.2%
Reading information on a phone app	45.6%	36.4%
Speaking with my midwife	43.4%	35.2%
Reading information via a printed brochure	42.2%	32.7%
Reading information via social media	38.5%	31.3%
Completing an online module on a website	37.2%	22.3%
Speaking with my general practitioner	26.5%	22.9%
Attending a formal class or seminar	26.1%	11.0%
Reading a magazine article	23.6%	17.0%
Reading information via an informal community forum	14.4%	11.9%

Study Limitations

- We had a low response rate
- The structure of the questions remained the same for ethical reasons
- Not representative of the general population
- Did not explore Indigenous issues
- Potential built in systematic error that possibly positively skewed results
- We asked too many demographic questions

Implications

- Future use of questionnaires
- Difficulty in recruitment
- Consider implications of commercial database imposed restrictions

What does this mean?

- There is a strong preference from participants to be able to source information from the internet.
  - We acknowledge the excellent work already achieved by peak organisations such as Red Nose Australia
  - The implications are that information that is provided must not only be reliable, but presented in such as way that the seekers can be confident of its reliability.
  - This suggests value in Departments of Health endorsing evidence-based recommendations for safe sleeping practices
- Reliable information is important for front line health professionals
  - Need to have access to information, and to be able to refer information
  - Problems with search engines who give preference to “paid” i.e. commercial sites

Where to from here?

- That said, our preliminary findings suggest areas that need to address uncertainties regarding
  - A baby with reflux sleeping supine
  - Sleeping in the same room as the parents
  - The consistent use of dummies
  - Breastfeeding (where possible)

  In addition, in the free text sections there was vocal disagreement regarding the practices of co-sleeping: anecdotal responses challenged the “thou shalt not” language of the recommendation, and advocated strongly for information that reduces the risk so that parents may make an informed choice

  Acceptance in Indigenous and CALD communities.

In closing

- To paraphrase WS Churchill

so much is owed

by so many

to so few.

Thank you to all M&CHN & Midwives

LA TROBE UNIVERSITY

Thank you

latrobe.edu.au