

# Midland Pēpi-Pod® Programme Update

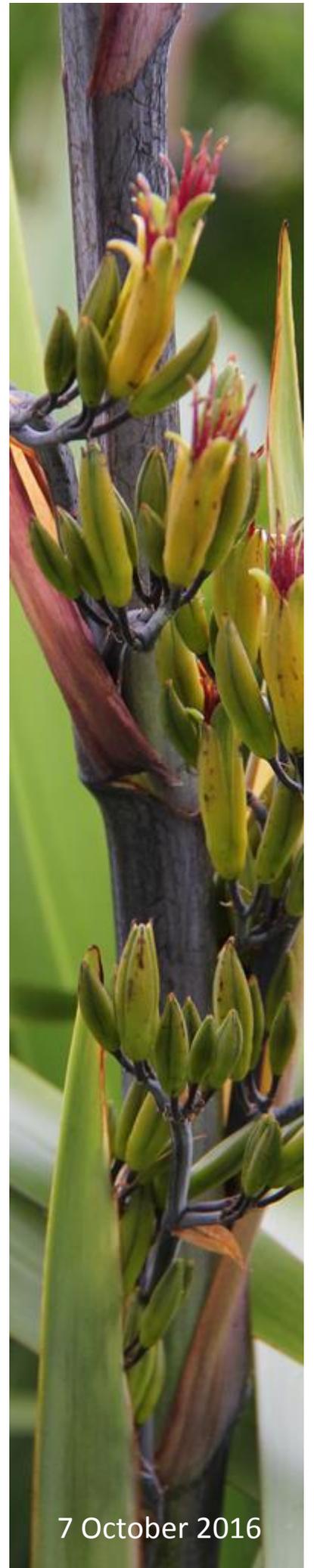
An update on the distribution and use of portable sleep spaces (PSS) for babies at increased risk of sudden infant death.

**July 2013 - Oct 2016**

**Stephanie Cowan**

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7 October 2016

# Midland Pēpi-Pod Programme Update

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Describing three years (Jul 2013-Oct 2016) of distribution and use of portable sleep spaces (PSS) for Midland babies at increased risk of sudden infant death

We dedicate this report to those who have led the introduction of the Pēpi-Pod® Programme into Midland and the teams of distributors who have provided, gathered and entered the data that are described here.

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*“I really liked our pēpi-pod and so did our baby. He doesn’t sleep in it any more so we have given it to my sister to use for her baby that is due in a few days.*

*I didn't know much about SUDI when I had our baby and I didn't know about how bad smoking during my pregnancy was for our baby and how it is a massive risk.*

*The midwife who gave me the pēpi-pod was really understanding and gave me a lot of information and some patches and gum to help me to stop smoking, and I can tell you now that I have QUIT.”*

Māori mother from the Bay of Plenty

## Commentary

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This update on an earlier national report [“Their first 500 sleeps”](#)<sup>i</sup> has been prepared at the request of the Midland Maternity Action Group to support their reporting requirements. While it reports data specific to the Pēpi-Pod® programmes of the five district health boards that make up the Midland region, it needs to be read in conjunction with the earlier report where methods are explained in full, results are presented in context, and the results discussed.

The data presented here is of work in progress and must not be misinterpreted. There are variations in:

- capacities of partner agencies to supply sleep spaces, maintain a supply of sleep spaces, and collect and enter data for those distributed
- numbers purchased and numbers distributed, as some agencies purchase incrementally and others in bulk, but with incremental supply to assist with storage
- timing of data entry with some agencies entering in bursts as time permits and others in a more systematic way throughout the year
- priority placed on SUDI, and on supplying sleep spaces, between DHBs
- distributions of more vulnerable infants across regions, including distributions of Māori and Pacific infants
- how well established services are; some regions with five years’ experience, others newer to the work and some as yet not involved at all
- who provides sleep space services within DHB regions. While all regions have purchased sleep spaces in greater or lesser quantities, providers within regions are not always DHBs, despite presenting data here grouped by DHB regions
- number of sleep spaces reused and circulating in communities, with some regions implementing a retrieval approach and others preferring that communities share knowledge and devices freely within their social networks.

The capacity to enter data onto the Pēpi-Pod® database for the issue of wahakura was enabled in 2014 at the request of participating agencies. To date, there are a total 67 entries for wahakura across 5 DHB regions and 30 of these are from Midland. The total number of wahakura distributed and in use is not known, but the number is increasing.

The new purpose-designed sleep space has resolved many of the problems previously reported, such as arms hitting the sides, looking like a coffin, instability and short duration of use.

# Executive Summary

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## Overview

A child's first five hundred sleeps are more vulnerable than those that follow, but the translation of 'evidence of risk' into 'protected infants' is complex. Since 2000, New Zealand has been frustrated by a slow rate of change to sudden infant death rates. Information technologies, such as advice-giving and print materials, successful in the past, seem less effective, especially with more vulnerable groups where known risks persist.

While information approaches are important to maintaining past changes, in some situations and communities knowing is not always enough to support the uptake of recommended practices. Also needed, are personalised and enabling strategies for infants at increased risk. The Pēpi-Pod® programme embraces such strategies.

The programme promotes key principles of infant protection through the targeted supply of portable sleep spaces (PSSs) plus personalised education, to families of more vulnerable babies. What began as an emergency response to the Christchurch earthquakes in 2011, is now an integral part of infant health and safety activity in many parts of New Zealand.

This report describes the application of the programme in the five DHB regions of Midland, New Zealand, in the three years and two months from July 2013 to October 2016. It reports data collected for: the issue of **4156** PSSs to more vulnerable babies, follow-up information for **2164** on acceptability of the approach, and feedback from a survey of **560** PSS users about their experiences.

## Main Findings

**Distribution:** Almost half (**48%**) of all PSSs distributed in Midland were to infants in the Waikato area and nearly a quarter (**23%**) to Bay of Plenty infants. Most (**99%**) PSSs were issued to babies with identified risk factors for sudden infant death (smoking in pregnancy (**65%**), <37 weeks gestation/ <2500g at birth (**23%**), mother aged <25 years (**45%**), low income parents (**72%**)). Most (**82%**) infants were Māori and already had a baby bed (**77%**), and **41%** were their mothers' first-born.

**Follow-up:** PSSs were acceptable to Midland families. At follow-up, **96%** of families wanted to keep their PPS after an initial period of use and **90%** had discussed safe infant sleep with a mean **7.7** others, engaging a recorded **14,833** people into conversations about safe infant sleep. Safe sleep principles were discussed with families in more than **96%** of cases ('on the back' (**97%**), 'face clear' (**97%**), 'in own space' (**97%**) and 'carer near' (**96%**)) and 'strong baby' principles in more than **93%** ('breastfed' (**95%**), 'smokefree' (**95%**), 'immunised' (**93%**) and 'handled gently' (**94%**)).

Contacted families reported high levels (>93%) of uptake of infant health recommendations at the follow-up visit ('on the back' **96%**, 'firmly tucked' **98%**, in parents' rooms at night' **96%**, always in a sleep space in risk locations **92%**). Eighty-two per cent of infants were currently breastfed (**59%** exclusively or fully and **23%** partially), most (**68%**) had mothers who were either smokefree (**34%**) or receiving smokefree support (**34%**), more than half (**56%**) had started immunisations, or were booked to, and a further **42%** intended to. Most (**97%**)

families had shown others how to handle their babies gently and 93% of infants were enrolled with a general practitioner or primary healthcare provider.

**Feedback:** Feedback from a 14% sample of surveyed users identified that 87% received their PSSs before their babies were 4 weeks old. As expected, duration of use fell with age of infant. An estimate of minimum duration of use was calculated using 'age stopped' for those no longer using their PSSs at the time of the survey (54%), and 'current age' for those still using theirs (46%). Based on this, at least 81% and 51% of infants were still using their PSSs at 8 and 12 weeks respectively, and 25% from 16 weeks. These proportions are minimums and imply that all current users would cease use immediately which is unlikely to be the case.

Overall, surveyed families rated the PSS highly (7-9/9 by 95%), valuing specifically its support with safety (93%), convenience (91%), and settling babies (78%). Most surveyed babies were breastfed 'yesterday' (73%), and placed for sleep on their backs (88%), with 91% sleeping in a baby bed, and 91% in the same room as a parent, 'last night'. Most babies (89%) were, or expected to be sleeping in cots when too big for PSSs.

**Mortality changes:** Annual post-perinatal mortality (7 days to 1 year, all causes) has fallen significantly in Midland since the introduction of the Pēpi-Pod® Programme in late 2011. While many factors have no doubt contributed, it is likely that the sleep space work has made an important contribution. Comparing three year clusters, annual rates for June-June years fell from 3.8 to 2.6 deaths per 1000 live births between 2008-10 and 2011-13 and this has been sustained for the 2014-16 period (see Fig 1. below). Importantly, the decline in mortality has been most marked and consistent for Māori infants where rates have fallen by 30% across the three time periods (from 5.0 to 4.0 and 3.5 deaths per 1000 live births). While inequalities persist, the gap between Māori and non-Māori post-perinatal mortality rates is reducing<sup>ii</sup>.

## Conclusion

In Midland, the Pēpi-Pod® programme was applied consistently and appropriately by distributors, PSSs were acceptable to and used appropriately by recipient families, and safety advice was reflected in snap shots of infant care. Post-perinatal death rates (7 days to 1 year, all causes) have fallen since the start of the intervention period in 2011, especially for Māori. This fall has continued for Māori infants and stabilised for the region as a whole. While cause and effect cannot be claimed it is likely, given the reach and impact described here, that the sleep space programme has made a significant contribution to mortality changes in the region.

# Figures

Fig. 1. Annual post-perinatal mortality rates for Midland, by ethnicity and for the June-June year.

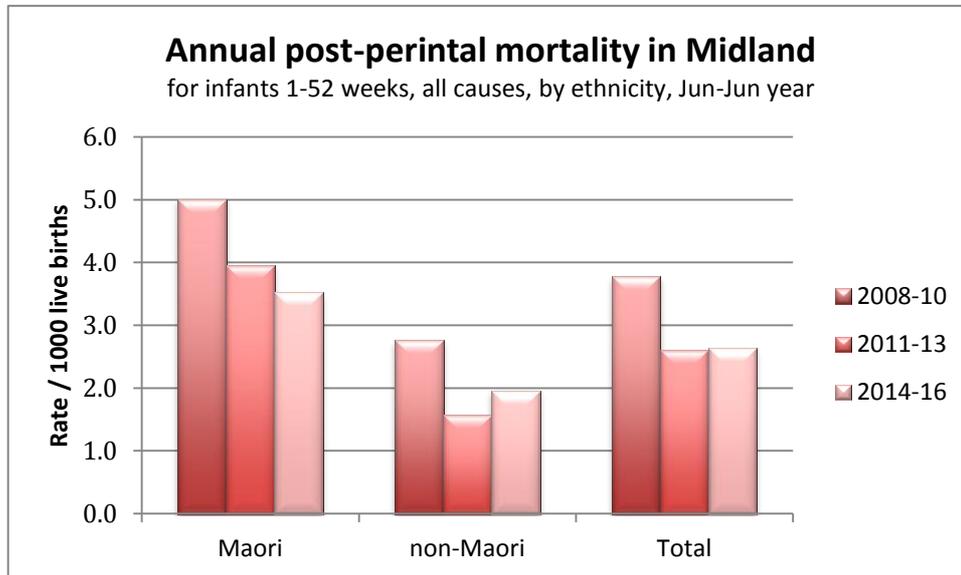
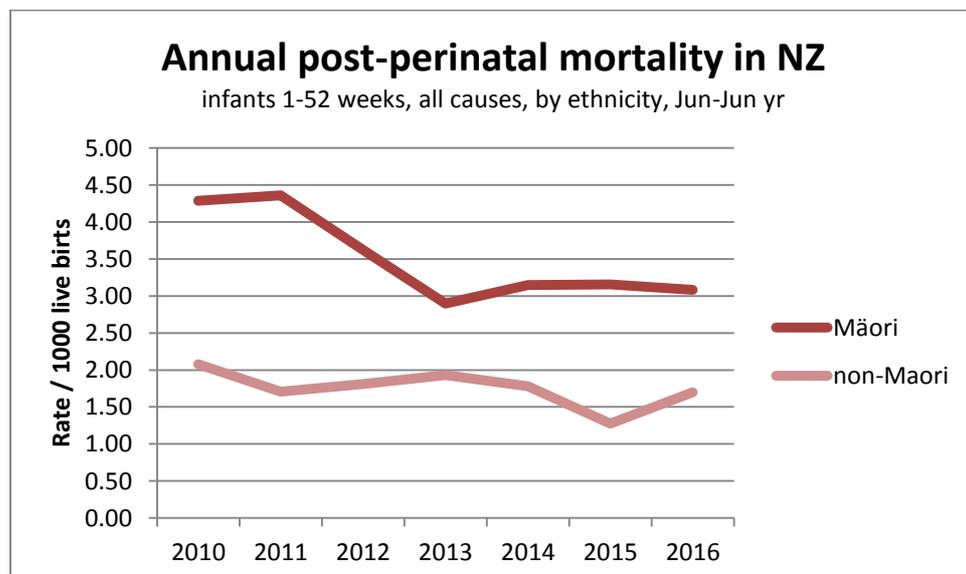


Fig. 2. Annual post-perinatal mortality in New Zealand, by ethnicity and for the June-June year.

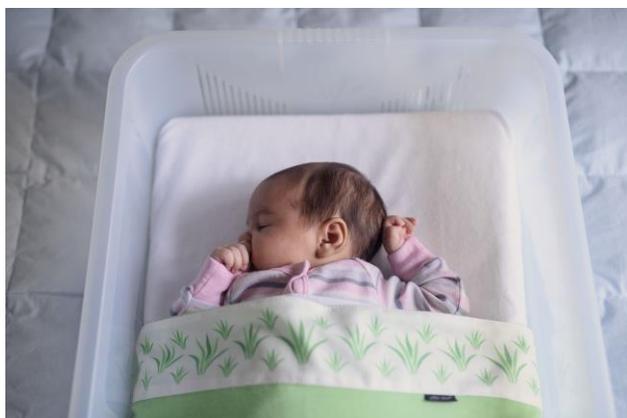


**Figure 3.** New customized device introduced in September 2014

a) used in the adult bed



b) used on the adult bed



## Tables

The data presented below are from information entered by participating agencies when a sleep space is distributed. It does not reflect the numbers purchased, nor in stock and yet to be supplied to families, nor the numbers supplied, but data not yet entered onto the programme database. They offer a comparison across DHBs for intensity of distribution in relation to birth numbers (Data source: NZ Statistics 2015) and main risk factors.

In summary, the data reflects that the distribution of PSSs across DHBs was similar in proportion to birth numbers for each region, with Waikato the most intensive and Taranaki the least intensive programme. Bay of Plenty and Tairāwhiti programmes had the greatest proportion of infants with main risk factors (smoking and prematurity).

Table 1. Distribution of PSSs in Midland by DHB and ethnicity (Jul 2013-Aug 2016)

DHB	Non-Maori	Maori	Total
Bay of Plenty	150	789	939 (23%)
Lakes	138	475	613 (15%)
Tairāwhiti	50	274	324 (8%)
Taranaki	66	199	265 (6%)
Waikato	350	1665	2015 (48%)
<b>Grand Total</b>	<b>754</b>	<b>3402</b>	<b>4156 (100%)</b>

Table 2. Distribution of PSSs by main risk factors for sudden infant death

DHB	Smoking in pregnancy	Prem/lbw
Bay of Plenty	762 (81%)	236 (25%)
Lakes	335 (55%)	180 (29%)
Tairāwhiti	235 (73%)	98 (30%)
Taranaki	180 (68%)	54 (20%)
Waikato	1195 (59%)	367 (18%)
<b>Grand Total</b>	<b>2707 (65%)</b>	<b>935 (23%)</b>

Table 3. Distribution of PSSs for Māori and Total annual births by DHB

DHB	Total Births		Maori Births		Total PSSs	
	n	%	n	%	n	%
Bay of Plenty	2892	<b>23.5</b>	1251	<b>23.7</b>	939	<b>22.6</b>
Lakes	1536	<b>12.5</b>	855	<b>16.2</b>	613	<b>14.7</b>
Tairāwhiti	717	<b>5.8</b>	492	<b>9.3</b>	324	<b>7.8</b>
Taranaki	1608	<b>13.0</b>	540	<b>10.2</b>	265	<b>6.4</b>
Waikato	5574	<b>45.2</b>	2148	<b>40.6</b>	2015	<b>48.5</b>
<b>Grand Total</b>	<b>12327</b>	<b>100.0</b>	<b>5286</b>	<b>100.0</b>	<b>4156</b>	<b>100.0</b>

## Comments from families

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Below are selected comments from recipients of sleep spaces expanding on their experiences using them. These are offered to colour the data and personalise the stories.

- A great idea, much safer having baby in a Pepi-Pod than just in bed where he could get rolled on.
- An excellent idea. Still using it and take it everywhere with me. My mum loves it and I'm going to share it.
- As soon as we got the pēpi-pod, the bassinette was put away!
- Baby stays with her dad sometimes, he knows about safe sleeping for babies too. The Pepi-Pod goes too.
- Baby was quite visible and that was a comfort for me looking over from my bed.
- Created a stronger bond.
- Didn't work for me because by the time we got it baby was used to sleeping with me.
- Easy to carry and move around
- Every Mother should have one, no matter what culture or circumstances, everyone needs one!
- Fantastic - it's been so good having a Pepi-Pod
- Fantastic idea. My son's sleeping is so much better after starting with the pēpi pod.
- Great to use when on the marae and when away from home, very light and portable
- Has passed it on to her sister.
- I am pregnant again and will use the Pepi-Pod for my next baby.
- I could put my baby in it on the couch or take it with me around the house, it's so portable.
- I felt a connection to my roots and tipuna using this wahakura.
- I felt like I could have a deep sleep when my baby slept in his pod in the same bed as me.
- I found the pēpi-pod great for the first 10 weeks of my baby's life before she became too big for it.
- I have given my pēpi pod to my sister and now she loves it as much as I did
- I love it!!! Baby can see us and we can see bubs whilst lying in bed and bubba is safe and happy to sleep.
- I pick it up and take it with me to whatever area I'm in so i can always hear baby.
- I think I got the pod too late as baby did not really take to it
- I think these are probably the most useful and positive baby initiative I have seen, ever, and this is my eighth baby
- I was good for us when we were living in a caravan
- I'm a first time mum and it was a good experience having the Pepi-Pod, I might pass it on to someone else now.
- It was a life saver at a very hard time.
- It was really convenient - I used it when I went to stay at my sister's place at the farm because she didn't have a cot, and I used it when I went to the marae.
- It was really good, I felt it kept my baby safe
- It's a good idea especially for premature babies
- It's awesome, I like it, it's handy, and I can take it anywhere.
- it's fantastic I tell all my friends about it my baby is so used to her pēpi pod she won't settle or sleep long if she isn't in it
- It's fantastic, especially for Maori who like to have baby in bed with us.
- It's good for the baby.
- I've passed in to a lady who's had triplets
- I've passed the Pepi-Pod onto someone else now and told them all about safe sleeping for babies
- I've spoken to lots of young mothers and they love the Pepi-Pod too, you get a good night's sleep having baby sleep close to you.

- Just good for getting breastfeeding sorted having him close to me.
- Makes it so much easier having 3 older kids.
- My husband is a tour guide at the marae and sometimes he took baby along with the Pepi-Pod and showed people. He was there when we were told about it at the beginning so he knew all about it.
- Other family members had mixed feelings about the Pepi-pod when I first used it, but after they saw the convenience and safer sleeps bubs was having it soon changed their minds.
- Pepi pod has gotten bigger love the big one
- She had slept in her pēpi-pod in the SCBU so was used to sleeping in it so when she came home we had no problems with an unsettled baby
- Thank you, the pēpi pod is lovely. I love the design of it and the wrap sheet, the merino wrap is also lovely.
- The linen is beautiful and easy to wash.
- The pēpi-pod is a great way to give baby their own bed when at home and also while travelling. We took it on holiday with us and it was used for his bed as well as his bath. Very convenient and helpful.
- The Pepi-Pod is awesome, everyone should have one. I tell everyone about it and I'm going to pass it onto my cousin for when she has her baby in February 2014. My mum and dad really like it too.
- The Pepi-Pod was a great asset, especially when we didn't really have anything for baby at first. It was very versatile - it was sturdy and stable and I put her in it on the couch and on the floor.
- The pēpi-pod was also good for us during the cold winter nights; he would sleep in our bed but always in the pēpi-pod.
- The pēpi-pod was more than a baby bed for us we learnt so much about how to protect our baby from SUDI.
- The Pepi-Pod was really convenient, several family members also had Pepi-Pods and when we were all together, the babies were all in their Pepi-Pods.
- The twins loved their pēpi-pods they were so settled in them.
- We are heavy sleepers, we have lost babies from suffocation in our family, the Pepi-Pod was really good, and I give it top marks.
- When people saw the baby in the Pepi-Pod they asked me about it
- When we were finally discharged home he was used to sleeping in his pēpi-pod which was great and it also meant that he could be close to us wherever we were. I would like to see the pēpi-pods a bit bigger and I understand that a new pēpi-pod has been designed which I think is supposed to be bigger but it is not available yet but will be great when it is as we would have loved to have had our baby in it for a little bit longer.
- When you are super tired baby can still be near you in bed
- Wish I had had one with my other 2 children. Best idea ever

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<sup>1</sup>Cowan, S. (2015). Their First 500 Sleeps: a full report of the first three years of implementation of the Pepi-Pod Sleep Space Programme (2012-2014). *Change for our Children* ISBN 978-1-877512-14-8 (pdf)

<sup>2</sup>Mitchell, E. A., Cowan, S. and Tipene-Leach, D. (2016), The recent fall in postperinatal mortality in New Zealand and the Safe Sleep programme. *Acta Paediatr.*  
doi:10.1111/apa.13494