

## Invited paper

# SIDS guidelines and the importance of nurses as role models

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*Despite improved knowledge about the risk factors associated with sudden infant death syndrome (SIDS) and successful public health campaigns to inform parents and health professionals about them, the SIDS rate in Australia remains higher than in some other developed countries.*

*Nurses share a special and close parental and infant advocacy role both in hospital and the community, which can have a powerful influence on the parent's choice of infant sleeping position. Practice that incorporates safe infant sleeping position and environment, accompanied by a verbal recommendation, can potentially save lives and, as such, is a duty of care for all nurses. This requires nurses to be aware of current evidence and to implement and promote recommendations for reducing the risk of SIDS.*

### What is SIDS?

The definition of sudden infant death syndrome (SIDS) has changed over time since first defined in 1969 by the pathologist, Beckwith<sup>1</sup>. As a diagnosis of exclusion, the history and death scene investigation are crucial and are included in the current USA definition:

*The sudden death of an infant under 1 year of age which remains unexplained after a thorough case investigation, including the performance of a complete autopsy, examination of the death scene, and review of the clinical history<sup>2</sup>.*

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Less precise is the definition that emerged in 1994 from the International SIDS Conference in Stavanger, Norway and which is currently used by the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) in the UK<sup>3</sup>.

*Sudden death in infancy unexplained after review of the clinical history, examination of the circumstances of death, and post mortem examination<sup>4</sup>.*

Overall, in Australia, there is no consensus and implementation of either definition is generally incomplete.

### Reduction in SIDS in Australia

The death rate from SIDS in Australia has decreased from a high of 2.44 per 1000 live births in the mid '80s to 0.47 per 1000 live births by 2002<sup>5</sup>. This 80% reduction in SIDS followed three parent-driven (SIDS and KIDS) public health campaigns, the first in 1991 called *Reducing the risk of SIDS* (RTR), the second in 1997 called *KIDS and SIDS and KIDS, three ways to reduce the risk*, and the third in 2000, *SIDS and KIDS, safe sleeping*. The message to parents, current today, is:

- Put baby on the *back* to sleep, from birth.
- Sleep baby with *face uncovered*.
- Cigarette smoke is *bad* for babies.

The decrease in SIDS deaths reported in the Netherlands, New Zealand, United Kingdom, Australia, Nordic countries and the USA has been attributed to a change in child care practices, principally parents placing their infant in a non-prone position for sleep<sup>6-14</sup>.

Nevertheless, Australia has a SIDS rate of 0.47 per 1000, still too high when compared to the Netherlands and Norway where the rates are now <0.2 per 1000 live births. Indeed, in the only data available for Australia (where thorough death scene investigation and history fulfilled the requirements for a definition of SIDS), Beal found that SIDS was rare in non-prone infants with the head uncovered, with a rate of <0.1 per 1000 live births<sup>15</sup>.

## SIDS and SUDIs

Now that SIDS has been substantially reduced, there have been increasing difficulties and differences in assigning cause of death so that increasing numbers of infant deaths are labelled as sleeping accidents, as accidental asphyxia, or of undetermined cause. It is clear now that sudden unexpected death in infancy (SUDI), whether the infant death is explained or classified as SIDS, shares many similar epidemiological features that are different to control (surviving) infants<sup>16</sup>. These include infant, maternal and socio-economic factors, especially poor socio-economic status and neonatal problems in general. Thus the focus of prevention needs to include all SUDIs, not just SIDS.

In a unique population study of all SUDIs, using robust methods for defining both the cause of death and the risk factors related to unsafe sleeping environments, Kemp *et al.* found that unsafe sleeping environments accounted for over 90% of SUDIs labelled as SIDS or as accidental suffocation or as undetermined and were therefore preventable<sup>17</sup>. Most striking was the finding that the majority of infants were either found prone or were recipients of other sleep practices that should be discouraged as unsafe (for example head covered due to loose bedding, wedging due to unsafe cots or ill fitting mattresses, accidental suffocation under pillows, shared sleeping in adult beds and sofas where surfaces were unsafe for infants).

In Australia, such data on SUDIs are not available. The strongest methodological data from Beal in South Australia found that the majority of SIDS were still found prone for the 3 decades from the 1970s to the 1990s, varying little from 83-86% of all deaths<sup>18</sup>.

### Why are SIDS and SUDI infants still found prone?

One important reason is that, in Australia, the message about the risk of side sleeping has not been adequately conveyed and/or received by parents and health care providers. The recent evidence suggests that both factors are occurring.

Side-sleeping position for infants is unstable, even in infants younger than 8 weeks, and is associated with an increasing risk of rolling prone with increasing age<sup>19</sup>. The increased risk of SIDS for side sleeping, after adjusting for other factors, suggested a twofold increased risk in the UK<sup>20</sup> (adjusted OR 2.16; CI 1.36, 3.43) to a sixfold increased risk in New Zealand<sup>21</sup> (adjusted OR 6.57; CI 1.71, 25.23). The greatest risk was found when an infant was unaccustomed to the prone position, that is placed non-prone but found prone (adjusted OR 19.3; CI 8.2, 44.8).

In 2001, the NSW Child Health Survey<sup>22</sup>, a population-based, cross-sectional telephone survey of parents and carers, found that, overall, one third of parents reported placing their infant on the side to sleep (30% in the metropolitan area and 39% in rural areas), whereas prone sleeping is now very uncommon (2.3% and 4.0% in each area, respectively).

In 2002, a survey of all nurse unit managers in maternity hospitals in NSW (response rate 98%) found that one third of nurses reported placing well term and near-term infants on the side to sleep while in hospital<sup>23</sup>. In Queensland, Young *et al.* demonstrated that nurses caring for neonates are aware of some but not all RTR messages<sup>24</sup>.

Information about general practitioners, obstetricians and paediatricians is not available for Australia but anecdotal evidence from parents of SIDS infants indicates that advice on side sleeping had been given by some doctors. A recent random sample of 3,717 such physicians in the USA found a lack of awareness of back as the preferred sleep position, with 50% recommending side or back position<sup>25</sup>.

### Nurses have the greatest potential to influence safe childcare practices to prevent SUDI and SIDS

Nurses share a special and close parental and infant advocacy role both in hospital and in the community. As such, nurses have the potential to prevent unnecessary infant death. Multiple sources indicate that parents report health professionals and then printed materials as the primary source of information concerning risk factors for SIDS<sup>26, 27</sup>.

The National Infant Sleep Position (NISP) study<sup>19</sup> was undertaken during the years 1992-1996 by randomly sampling households with infants less than 8 months old from a nationally representative list. The second part of the annual survey was reported in 2000<sup>27</sup>. Supine positioning was highest for those caregivers who reported receiving a recommendation for the supine position only. Among those who received this recommendation, 74% placed the baby supine for sleep in 1995-98.

Exposure to a recommendation of supine position only, from sources available to the mother throughout the first 7 postnatal months, strongly influences choice of sleep position. Compared with 33% of caretakers who received no recommendation for 'supine not prone', the effects of exposure to a nurse, physician, reading materials or hearing such a recommendation, were additive; the greatest effect, increasing the probability of supine placement, was from all four sources<sup>27</sup> (OR 6.01; CI 4.57, 7.90). In a community of predominantly African American parents, infants were more likely to sleep supine if parents had heard a back-sleeping recommendation from a health care

professional<sup>28</sup> (OR 5.7,  $p < 0.001$ ). Infants were least likely to sleep supine if the parents had heard a side or a side/back recommendation (OR 0.26,  $p = 0.001$ ).

In addition, from their targeted risk reduction education programme in a black urban community, Rasinski *et al.* concluded that uniform practice in the birth hospital and recommendation of the supine position, coupled with a specific educational programme by the doctor or nurse, would potentially maximise safe sleeping practices at home<sup>29</sup>.

One dominant reason why mothers<sup>27</sup> and health professionals, both doctors<sup>30</sup> and nurses<sup>23,31,32</sup>, choose the side or prone position has been the fear of vomiting, choking or aspiration. This reason is not based on evidence. No increased risk of choking, wheezing, breathlessness, cyanosis, pallor or breathing problems with back sleeping has been reported in epidemiological studies<sup>33,34</sup> and no increase in aspiration deaths was reported by pathologists<sup>35,36</sup>. Rather, the risk of aspiration has been associated with infants who vomit when in the prone position<sup>33,35</sup>. Physiological and anatomical studies demonstrate that the supine position is safest and why this is so<sup>37</sup>. These facts represent crucial knowledge for health professionals and especially nurses, as role modelling by nurses plays a key role in what parents do concerning safe child care practices.

### The importance of nurses being role models

There is both theoretical and educational evidence that, because people learn through observation, modelling by health care providers can be a powerful influence on behaviour<sup>38,39</sup>.

The concept of modelling was examined by Brenner and colleagues<sup>40</sup>, with some evidence that, if mothers observe their babies prone in hospitals, they were significantly more likely to place them prone at home compared with mothers who had observed their babies supine in hospital. The reverse was also confirmed – mothers who were both told and observed their baby supine were most likely to choose this position at home for their infant's sleep<sup>41</sup>. Furthermore, simple instruction to parents and practising supine sleeping in the nursery resulted in many more parents reportedly placing their infants supine for sleep when at home 2 weeks after birth (OR 4.2; CI 2.1, 7.9). The conclusions were based on a before and after sample of parents. Nevertheless, there was an almost doubling of the outcome (infant sleeping supine) from before (42%) to after (75%) intervention.

In hospital and before babies are discharged home, the 'safe sleeping' messages must be correctly implemented by nurses. There is sufficient and compelling evidence to suggest that prone sleeping is causal to SIDS and unsafe sleeping practices are causal to >90% of SUDIs. The UK

study remains unique in its design and capacity to highlight where preventive efforts for SUDI need to be directed<sup>46</sup>. Adolescent mothers, disadvantaged families and any baby with a neonatal problem of any type (as these infants constitute one quarter to one third of all SUDIs), should receive attention in maternity hospitals and in the community for education and follow up, for both support and reinforcement of the risk reduction messages.

Similarly, in the community, both at early childhood centres and at home visits, nurses must check on infant safe sleeping and explain to parents why this is so important. That is, the messages concerning prevention of SIDS and SUDI must incorporate evidence based knowledge, skills and attitudes. Thus, advice for well term or near term infants should include:

- Exclusive positioning on the back to sleep, not on the side and not at an angle of 30°.
- Behavioural advice and support for parents to cease smoking.
- Safe sleeping environment information. Bed sharing can increase the risk of SIDS and fatal sleeping accidents if the mother smokes, the caretaker shares a sofa with the infant, the parent is under the influence of alcohol, or the sleeping environment is unsafe (such as soft surfaces, pillows, potential for head covering by bedclothes or wedging of the infant between parents or structures).

Either significant protection or no risk of SIDS has been found if the infant shares a room with an adult<sup>42,43</sup>. By contrast, bed sharing has not been found to be protective of SIDS<sup>43</sup>.

Finally, the careful examination of SUDIs in the UK, documented in the 5th annual report on CESDI in 1998 [[www.cesdi.org.uk](http://www.cesdi.org.uk)] and reported by Platt *et al.*<sup>44</sup> highlighted the striking finding of recent illness prior to death in nearly half of the infants with explained SUDI and in a smaller number of SIDS (11% versus 4% of controls). In the confidential enquiry, 67 of the explained SUDIs were examined for factors that involved sub optimal care by professionals or carers that may have contributed to death. Over half of the deaths might have been avoided if those involved had acted differently. There is therefore a need to improve methods by which parents and health professionals recognise infants in need of medical attention.

### Summary

Nurses are in a unique position to prevent sudden unexpected death in infancy. Anticipatory and unequivocal guidance and demonstration by nurses for first-time parents, experienced parents and parents from low socio-economic groups is essential, emphasising:

- Safety of supine sleep.
- Instability and dangers of side sleeping.
- Addressing fears of choking.
- Providing alternative settling techniques for sleep rather than the prone position.
- Reinforcing the consistent recommendations for supine sleep and safe sleeping at every opportunity in the antenatal, neonatal and community environment.

Efforts to promote supine and safe sleeping should address:

- Education of parents and health professionals.
- Correct practice of what is said in the nursery and postnatal wards.
- Justification based on current and up to date evidence.

An evidence based protocol, incorporating a revised cot card that addresses both safe sleeping position and safe sleeping environment, is available at the RPA Newborn Care home page: <http://www.cs.nsw.gov.au/rpa/neonatal>

Implementing a safe infant sleeping position and environment can potentially save lives and, as such, is a duty of care for all nurses.

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