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ORIGINAL ARTICLE

How can we help staff transition to a new NICU design?

Margaret Broom, BaN, RN, RM, Neonatal Research Nurse[a,*], Anne Gardner, PhD, Professor, Director of Research[b], Zsuzsoka Kecskes, MD, PhD, Professor, Clinical Director[c,d], Sue Kildea, PhD, Professor, Director of Research[e]

[a] *Neonatal Intensive Care Unit, Department of Neonatology, Centenary Hospital for Women and Children, Australian Catholic University, Canberra, Australia*
[b] *School of Nursing, Midwifery and Paramedicine (Signadou Campus), Canberra, Australia*
[c] *Neonatal Intensive Care Unit, Department of Neonatology, Canberra Hospital, Yamba Drive, Garran, ACT, 2606, Australia*
[d] *Australian National University, Canberra, ACT, Australia*
[e] *Midwifery Research Unit, University of Queensland (UQ), School of Nursing and Midwifery and Mater Health Service, Australia*

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Abstract *Background:* Research has highlighted transitioning to the new design may be challenging for staff. To facilitate the transition to a new NICU we have searched literature to find strategies other units have implemented during their transition.
Methodology: Literature was retrieved via electronic and manual searches of MEDLINE, CINAHL, Science Direct and Cochrane databases. A list of keywords directed our search: Intensive Care Units, Neonatal, Hospital Design and Construction, Single Room Design (SRD), Change Management and Staff Attitude to Change.
Results: Seven articles provided detailed outlines of the strategies they implemented during transition to SRD. Our search has also highlighted the limited published work on solving staff issues post transition.

* Corresponding author. Department of Neonatology, Centenary Hospital for Women and Children, PO Box 11, Woden ACT 2606, Australia. Tel.: +61 (0)11612 61747570.
E-mail address: Margaret.Broom@act.gov.au (M. Broom).

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Conclusion: This review provides an outline of strategies to facilitate the transition when changing NICU design. Future research that specifically targets the issues highlighted by staff may assist in finding long term solutions for those transitioning to a new NICU design.

Introduction

Providing neonates who require hospitalisation a developmentally appropriate environment has become one of the foremost objectives in improving neonatal outcomes (White, 2003). As a consequence many Neonatal Intensive Care Units (NICUs) are in the process of changing their design from open plan (OP) to a single or small room design (SRD) catering for one to six neonates per room (Goldschmidt and Gordin, 2006). Research has shown SRD reduces infection rates, reduces length of hospital stay and facilitates an individualised approach in the care of neonates that improves the family's NICU experience (White, 2003).

While changing NICU design to improve neonatal outcomes is the priority, studies have highlighted that staff will take two years or more to adjust to the change of design and subsequent model of care (Goldschmidt and Gordin, 2006). Nursing staff must not only familiarise themselves with new environment but also adjust to its impact on nursing practice and workflow. In OP environments several staff members work side by side sharing tasks and workload: they are able to assist each other in emergencies, relieve each other for breaks, and discuss their concerns or care plan throughout the shift (Beck et al., 2009). In contrast SRD requires staff to work independently with assistance available at the end of the phone or buzzer, causing many staff to feel insecure in the new design (Shahheidari and Homer, 2012).

A systematic literature review on the impact of NICU design on infants, staff and families concurred with previous research in finding that SRD improves the physical aspects of the environment and short term neonatal outcomes (Shahheidari and Homer, 2012). The same review showed that when considering the impact on staff several issues of concern were raised. Shahheidari and Homer (2012) highlighted staff perceptions of SRD increasing staff walking distances, workload and the number of staff required to provide safe nursing care. Research findings included comment on the difficulty in communicating effectively, supporting other staff members and in providing ongoing education: major concerns given that these are key aspects of effective nursing in a NICU (Shahheidari and Homer, 2012). The review discussed solutions to the challenges in the new physical environment; such as centralised workspaces, using interactive media such as video or instant messages systems and changing management systems to reduce the size of the functional unit; but there was little discussion on how to assist staff to make the transition and adjust to the new environment (Shahheidari and Homer, 2012).

In 2009 a NICU (large tertiary referral hospital in Australia) started the process of building a new NICU. The concept for the new NICU was for neonates to be cared for in interlinking two cot (TC) rooms; the previous NICU was OP. Whilst the decision to build the new NICU in an TC format had been made, there was little detail on how the move would be accomplished and how nursing practices would change in the new NICU.

Staff were aware that previous research had highlighted the difficulties with the transition from an OP to a TC design and raised similiar questions about how the new design would impact on safety of neonates and staff, staffing requirements and staff's ability to provide high quality nursing care in isolation from support (Shahheidari and Homer, 2012). Staff openly discussed the possibility that this new environment would cause them to seriously consider other areas for employment or retirement from the profession completely (Broom et al., 2012). Whilst the need to ensure the new NICU provided a developmental appropriate environment and met building standards was a forgone requirement, leading staff members were also keen to allay staff concerns and provide effective support to staff negotitating the transition.

To achieve this an evidence based approach to find solutions to the issues was undertaken, which included a literature review to identify strategies implemented by other units that had undergone similar challenges.