

The impact of changing workforce patterns in UK paediatric intensive care units (PICUs) on staff practice and patient outcomes

Executive summary for the National Institute for Health Research Service Delivery and Organisation programme

March, 2009

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Executive Summary

Background

NHS workforce policies and workforce re-design are being driven by shortages of skilled staff and doctors. New ways of working have largely meant developing extended or advanced nursing roles to undertake tasks in substitution for doctors. To date there is little evidence about the impact of extended nursing roles on the care team or on staff groups' time spent in direct patient care. It also remains uncertain if nurses in extended roles in care teams is associated with improved patient outcomes and satisfaction.

Aims

The aim of this study was to assess the impact of extended nursing roles on staff and on patient outcomes in UK Paediatric Intensive Care Units (PICUs).

About this study

This study describes the workplace context and identified new extended nursing roles in 27 UK PICUs. In a prospective observational study it compares six units without to six units with new extended nursing roles (nurses undertaking tasks outwith usual nursing practice). It compares the impact of extended nursing roles on:

- Staff - in terms of their views and experiences, wellbeing, and staff costs;
- Patients - in terms of staff groups' time spent directly caring for patients, care processes, clinical outcomes and user experience.

Key findings

Following a UK-wide survey and nursing skills analysis, PICUs were categorised into unit types of higher (nurses undertaking five or more of six respiratory support tasks) and lower (nurses undertake one or none of six respiratory support tasks). These selected tasks are important clinical skills in the care team since three quarters of all children admitted to PICU receive respiratory support by mechanical ventilation.

Twelve units (six higher and six lower) were randomly selected and took part in the prospective study.

Comparing the impact of higher vs lower extended nursing role on staff showed:

- More staff in higher units reported working overtime, suffering work-related stress and work pressure, but also recognized their supportive management
- Higher units demonstrated more supportive human resource management initiatives and a culture to empower and retain nurses
- Staff views of extended nurse roles varied widely. Although higher units tended to be more enthusiastic about acquiring a tier of skilled nurses in replacement for trainee doctors, this was yet to be achieved
- Perceived barriers to extended nursing roles were:
 - scarcity of experienced or skilled nurses
 - no backfill for nurse training
 - lower skill levels of in-coming new nurses and doctors
 - adherence to traditional professional role demarcation
 - risk of further limiting medical training opportunities
 - role blurring possibly undermining effective inter-disciplinary team working.
- No evidence of difference in staff costs, those tended to be fixed and related to unit size.

Comparing the impact of higher vs lower extended nursing role on patients showed:

- No evidence of a significant difference in “who cares”. The overall direct care time spent by nurses and doctors with patients were:
 - 67% (lower) vs 71% (higher) of nurse time;
 - 2.9% (lower) vs 2.1% (higher) of nurse time undertaking extended respiratory tasks;
 - And doctor time attending at bedside 13% (lower) vs 9% (higher);Taking account of wide variation between units, these differences are not significant.
- No evidence of any difference for patients in length of stay or unplanned re-admission to PICU, nor in probable ventilator-associated pneumonia (a healthcare-associated infection)
- No discernable difference in parents’ very positive views of PICU care. But users valued expertise, and were cautious or

negative about care being devolved to less qualified staff.

Conclusions

There is no evidence of impact of extended nursing roles on patients from this study. Although this might be interpreted to suggest that care teams with extended nursing roles perform as well as those without, in-depth evidence from interviews and observation of staff groups' direct care activities suggests:

- first, higher units had yet to deliver consistent task substitution by nurses (as either nurses or doctors might still undertake the defined clinical tasks, and managers reported too few extended role nurses to deliver extended respiratory tasks) to make a discernable impact;
- second, that if these extended respiratory support tasks do require 2 to 3% of the total nursing care time, this could represent a small direct care time substitution of nurses for doctors, particularly when undertaken efficiently by an experienced nurse.

For policy and practice, uncertainties remain about whether:

- enough trained extended role nurses will be achievable or sustainable to replace fewer trainee doctors.
- extended roles may adversely affect staff wellbeing.

Training requirements for both nurses and medical trainees remain key issues. A nationally-agreed skillset for extended practice that is recognised by professional councils and intensive care units could better support nurse workforce skills development, avoid local professional role demarcations that currently vary widely, and support wider expert workforce sustainability and inter-disciplinary team working.

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene & Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact sdo@southampton.ac.uk.