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National survey of the education provision for including the Newborn Physical Examination (NIPE) in the pre-registration midwifery curriculum. Part A

Abstract

Objectives

- To determine the number of Approved Education Institutions (AEIs) offering training in the Newborn Physical Examination (NIPE) as part of pre-registration midwifery programmes
- To explore the reasons for including the NIPE and the experiences of those AEIs which have implemented it.

Design

In early 2015, all Lead Midwives for Education (LMEs) in the United Kingdom were sent a link to an on-line questionnaire which aimed to assess the scope and practice of NIPE education in programmes of pre-registration midwifery education.

Key findings

68.9% of all AEIs completed the questionnaire. 25% of those that responded stated that NIPE training is included in their pre-registration midwifery programmes; one AEI included NIPE in the shortened midwifery programme and the remainder as part of the three year programme. 37.5% of respondents reported they were planning to implement the NIPE within the next 2-5 years and 30% reported they had no plans to do so.

Rationales for including the NIPE were broadly summarised as follows: NIPE skills are consistent with the philosophy of midwifery, training midwives to undertake the NIPE meets service needs and also provides a responsive maternity service. Some AEIs reported very positive experiences, identifying benefits for practice partners, commissioners, students and service-users. Others reported challenges, particularly in relation to resources and student support in practice.

Conclusions

Despite previous recommendations to expand NIPE training into the undergraduate curriculum, few AEIs are currently providing this. Although barriers doubtless exist, the success of the few institutions which have incorporated NIPE into their curricula is evidence that this is not only possible, but has proven benefits.

Introduction and background

Midwives are responsible for undertaking a preliminary examination of the newborn at birth, to ascertain any obvious signs of abnormality and thereafter to undertake a daily examination in accordance with article 40 of the EU Directives for midwives 2005/36/EU (Nursing and Midwifery Council, 2009). The NMC sets the standards for midwifery education which specify that on entry to the register, midwives must be able to evaluate neonatal wellbeing, which includes performing a physical examination. To achieve this, students must complete the daily examination and care of at least one hundred newborn babies, underpinned by theoretical learning and practice development. The more detailed Newborn Infant Physical Examination (NIPE), colloquially known as the 'discharge examination' was traditionally performed only by junior doctors or GPs. It has long been argued that the inclusion of the NIPE within the midwives' sphere of practice is a logical step for midwives as experts in the care of normal childbirth and provides continuity of care and a more holistic service as well as improved standards in the quality of care due to midwives' enhanced knowledge and understanding of neonatal wellbeing (MacKeith, 1995; Michaelides, 1997; Rose, 1994).

In recent years, opportunities have arisen for midwives to train to become NIPE practitioners. In the early years of this century, a study was undertaken which included a randomised control trial of the cost-effectiveness of NIPE trained midwives and senior house officers (Townsend, Wolke, & Hayes, 2004). Known as the EMREN study, the findings confirmed not only the cost-effectiveness of midwives as NIPE practitioners, but also found that undertaking the NIPE strengthened the position of the midwives as autonomous practitioners by enabling them to provide total care to mothers and babies. Whilst midwives in this study were concerned about increased workloads and pressure to adopt new roles, the NIPE was generally believed to be easily incorporated without jeopardising overall standards of care (Rogers, Bloomsfield, & Townsend, 2003; Townsend et al., 2004).

Subsequent literature illustrates a growing acceptance of midwives undertaking the NIPE as part of their enhanced role (Baker K, 2010) and observes that midwives value the accountability of including the NIPE as part of their holistic provision of care (McDonald, 2013). However, a national survey of current NIPE practice revealed that despite the recommendations of the EMREN study (Townsend et al., 2004) only 13.7% of UK midwives are currently NIPE trained and a high proportion of these are undertaking a significant number of NIPes (Rogers, Jay, Yearley, & Beeton, 2015). Blake (2012) explored the potential of student midwives undertaking the NIPE as a compulsory part of their pre-registration programme and thus qualifying as a NIPE practitioner at the point of registration (Blake, 2012). The authors of the current article argue that pre-registration midwifery programmes should be enhanced to include the full neonatal examination as part of the standard curriculum.

More than a decade after the EMREM study (Townsend et al., 2004), the feasibility of including NIPE as part of pre-registration midwifery programmes was further explored within one AEI in the Eastern region of England. A training programme was subsequently included within newly validated pre-registration midwifery programmes on the 3year and shortened programmes. This was in addition to the NIPE module which already existed within the post registration midwifery education provision. The following year, a research project was commenced to assess the wider UK situation regarding the provision of NIPE education for midwives. This was undertaken in two phases: phase one consisted of an online survey of all heads of Midwifery in the UK. A report of this has already been published (Rogers et al., 2015). Phase two comprised a national survey of all NMC AEIs in the UK undertaken between autumn 2014 and spring 2015. Respondents were asked to report their provision of NIPE education for pre- and post-registration midwives. The findings of this phase of the study are in two parts. The current paper (part A) details the scope and extent of NIPE education in pre-registration midwifery programmes. Part B will report on the provision, drivers, structure and requirements for midwives completing the programme and will present the similarities and differences around pre and post registration preparation requirements.

Methods

A questionnaire was developed by a team of midwifery educationalists utilising some of the content from a tool devised from phase one of this study (Rogers et al., 2015). A pilot study was undertaken in a single AEI, after which the questionnaire, accompanying letter and instructions underwent minor modifications to improve clarity and ease of completion. The Bristol Online Survey (BOS) tool was used to distribute the questionnaire to all Lead Midwives for Education (LMEs) in the UK as listed on the NMC website. All LMEs were sent a link to the on-line tool during the spring of 2015 and were invited to forward the questionnaire to those individuals in their AEI who were best placed to supply the information. This was followed up by two email reminders to non-responders. The survey was also discussed as an item for 'any other business' at a national LME strategic reference group meeting in March 2015 to encourage outstanding non-responders to participate. Data were analysed using the BOS analysis function and via detailed analysis by the chief investigator (C. Rogers). Data were also cross-checked by the other investigators in order to enhance analytical rigour.

Findings

Pre-registration provision of NIPE education

Responses were received from 40 out of a possible 58 AEs (68.9%). NIPE training was reported as being included in 10 pre-registration midwifery programmes, however one AE offered the NIPE as part of an optional module for third year student midwives. Only one of the 40 AEs included NIPE as part of the shortened midwifery programme, the others included it as part of the three year programme. The first AEs to implement the NIPE did so in 2011. One AE reported that NIPE had been validated within a newly validated pre-registration midwifery curriculum in 2014 and was due to commence in 2016. An additional 15 AEs (37.5%) stated that they were planning to implement the NIPE as part of pre-registration programmes within the next 2-5 years, with 12 (30%) reporting that they had no plans to include the NIPE and seven uncertain as to its inclusion in the future.

Rationale for including NIPE as part of Pre-registration midwifery programmes

Of the 10 AEs which included NIPE in their pre-registration curriculum, nine commented on their rationale for doing so. Thematic analysis of the comments was undertaken and three broad themes were identified; these were summarised as follows: NIPE skills are consistent with the philosophy of midwifery, NIPE education meets service needs and also provides a responsive maternity service

NIPE skills are consistent with the philosophy of midwifery

Several comments reflected the view that the NIPE was integral to the role of the midwife and thus essential to enable midwives to provide continuous and holistic care. Opinions on this matter were strong and several respondents commented that it was essential that midwives were qualified in NIPE at the point of registration.

NIPE education meets service needs

Several respondents noted that directors of maternity services would value a midwifery workforce with NIPE skills from the point of registration. Respondents recognised that the needs of individual Trusts' varied, including the need for a midwifery workforce prepared to work in contemporary practice and the requirement for cost effectiveness to reduce their education budget. Furthermore, it was identified that changing patterns and places of care have increased demand for the availability of NIPE practitioners to work in a variety of settings, including the community.

NIPE education helps provide a responsive maternity service

The requirement to ensure the midwifery workforce is fit for purpose and is able to meet the demands of a modern maternity services resonated in several of the comments. A number of respondents stated that completing the NIPE enabled midwives to act as lead professional, as well as ensuring that midwives could meet the demands of working in the current practice environment.

Implementing the findings of previous research including the EMREN study (Townsend et al., 2004) and the recommendations of Midwifery 2020, as well as those of the National Screening Committee were cited as important drivers. An additional driver for some AEIs was the need to ensure the curriculum is current and that students are given the opportunity to enhance practice.

The experience of NIPE as part of pre-registration midwifery programmes

Respondents were invited to comment on their experience of offering the NIPE as part of pre-registration training. Of those who currently incorporated NIPE into their programmes, only four had students who had actually completed such a programme. In two of these AEIs, a staged approach to implementing the NIPE in the pre-registration programmes was in place; this comprised students completing the theoretical component and then undertaking a practical element following NMC registration. The reason stated was that a lack of NIPE qualified practitioners meant that students could not be supported in practice during their undergraduate programme. In the two remaining AEIs, students were assessed as competent to perform the NIPE at the point of registration: both stated that the introduction of the NIPE was extremely successful. The quotation below exemplifies how one AEI developed a forward planning strategy to cope with the perceived impact of the innovation on practice partners.

Following the validation of NIPE in pre-registration midwifery programme in addition to existing post reg. NIPE students, the [Name of Institution] implemented a succession plan for midwifery lecturers to undertake the NIPE training to work in collaborative partnership with NIPE practitioners in our partner trusts. To date 50% of the midwifery academic staff have undertaken the post registration NIPE training to ensure adequate individual NIPE student support in practice to boost existing NIPE practitioners. (AEI 11)

NIPE education core content, structure and assessment

Among the 10 AEIs that provided pre-registration NIPE education, seven stated there was an education lead for NIPE, whilst three had no identified lead. Overall 19.6% of all AEI's midwifery employed lecturers who were NIPE qualified. A number of questions were asked relating to the requirements of NIPE training, including support in practice and assessment of competence. With the exception of the two AEIs which offered the theoretical component only, a wide variation existed in the number of supervised NIPes that students were required to complete to develop their competence. This ranged from no specific number to between 5 and 50, with the majority reporting between 11 and 30 examinations.

A range of NIPE practitioners was identified as being permitted to verify students' NIPE experiences (Table 1).

Table 1

Role/Job descriptors of practitioners permitted to supervise NIPE's undertaken by students 10 responses received	No	%
Paediatric SHO	1	10.0%
NIPE trained link lecturers	4	40.0%
NIPE trained neonatal nurses/advanced practitioners	6	60.0%
Midwife with NIPE and mentorship qualification	7	70.0%
Midwife with NIPE qualification	7	70.0%
Paediatric registrar	7	70.0%
Consultant paediatrician	8	80.0%
Total	10	100.0%

A range of academic credit awards and different levels existed for students completing the NIPE. In one AEI the NIPE was not linked to any specific module, and thus did and did not carry any credits. In eight AEIs the assessment was comprised of both theoretical and practice components, whilst for the remaining two, assessment was purely theoretical. A variety of assessment strategies was employed to measure the learning outcomes. (Table 2)

Table 2

If your students undergo an assessment in theory, what does this include? 9 Responses Received	No	%
OSCE	3	33.3%
Other	3	33.3%
Presentation	1	11.1%
Professional discussion (Viva Voce)	1	11.1%
Reflective essay/case study	4	44.4%
Written examination	1	11.1%
Total	9	100.0%

In relation to practice related assessments, only one AEI reported grading the practice assessment stating the reason as being for "*Better levels of competency*" (AEI 6) whereas the others six assessed practice solely on pass/fail criteria. Assessment of student competencies for undertaking NIPE in practice were verified by a variety of practitioners, including NIPE qualified clinical mentors, NIPE qualified link lecturers, paediatric consultants /registrars and advanced neonatal nurse practitioners (ANNP).

AEIs which did not currently offer NIPE within the pre-registration midwifery programmes were asked about the content of their standard midwifery programmes in relation to the care and examination of the neonate. 16 responses were received and the results are grouped under five main themes (Table 3):

Table 3

Curriculum content included about the care and examination of the neonate - main themes
<p>1. Fetal anatomy and physiology of the newborn and adaptation to extra uterine life</p> <ul style="list-style-type: none"> • Fetal development and the fetal environment, teratogenicity • An introduction to genetics • Fetal circulation and adaptation to extra uterine life
<p>2. Care of the newborn</p> <ul style="list-style-type: none"> • Thermoregulation, jaundice, physiological changes examination of the newborn • Health promotion
<p>3. Infant feeding</p> <ul style="list-style-type: none"> • Theories of attachment • UNICEF breast feeding outcomes and BFI standards
<p>4. Neonatal disorders and the compromised newborn</p> <ul style="list-style-type: none"> • Infection, congenital abnormalities, birth injuries, jaundice, preterm infant and near term issues, infant of the diabetic mother • Neonatal resuscitation at birth
<p>5. Neonatal surveillance/screening</p> <ul style="list-style-type: none"> • NIPE screening programme • Overview of the extended role of the midwife with regard to NIPE; heart, hip, testes and eye examination

Among the 30 AEIs which did not currently include the NIPE, 15 reported that they were planning to include it at a later date, the remainder were either undecided (7) or had no intention of including it. One response was uncertain:

We are considering it but feel it warrants careful assessment in a programme with significant demands on the student and practitioners. (AEI 35)

AEIs which were not planning to include NIPE as part of their pre-registration midwifery programmes were asked the reasons for their decision. 16 replies were received (Table 4).

Table 4

If you are NOT planning to include NIPE as part of your pre-registration midwifery programmes, please indicate the reasons below	No	%
16 Responses Received		
Not an NMC requirement	5	31.3%
The AEI does not consider it part of the core pre-registration curriculum	5	31.3%
There is no room to include it in the curriculum	5	31.3%
Insufficient suitably qualified staff on clinical sites	4	25.0%
Insufficient suitably qualified staff at AEI to provide training	3	18.8%
Lack of support from clinical partners	1	6.3%
Other	6	37.5%
Total	16	100.0%

There were 6 responses in the “Other” category which offered a range of reasons.

In two cases the discussions were ongoing and related to the possibility of NIPes being included as part of an MSc programme. Other factors related to the maintenance of skills of the midwifery lecturing team, including concerns about lecturers maintaining their NIPE skills if they were to train. There was ongoing debate between AEIs and the feasibility of partner Trusts in supporting a perceived additional service impact:

Although clinical partners were keen to include it, it was felt that there were insufficient in staff with the qualifications and experience in practice to adequately support and assess student midwives to achieve competence within the timeframe of the programme. (AEI 33)

We currently believe that practical elements of the NIPE are not achievable in a pre-registration programme. (AEI 38)

There was [sic] already appropriate content to equip students to provide care as newly qualified is included in the programme. (AEI 9)

Discussion

Whilst AEIs recognise the benefits of including NIPE education in the pre-registration curriculum, few have taken steps to adopt this. This may be due to professional legislative changes resulting in more pressing demands on pre-registration midwifery education, i.e. the removal of statutory Supervision of Midwives and the revoking of the midwives rule standards (NMC, 2012) with effect from the 1st April 2017. Moreover EU moves to extend the length of the shorted midwifery programme may be having an impact on the development of local curriculum initiatives, as wider strategic changes

demanding compliance with NMC quality assurance processes take precedence. Another confounding factor may be the uncertainty surrounding the date of publication of the revised NMC standards for pre-registration midwifery education, which might curtail innovative curriculum development. However, NIPE is not currently an NMC requirement for registration as a midwife.

Aside from the impact of national professional regulatory changes, the findings of this study illustrate some practical barriers to incorporating NIPE into pre-registration programmes. NMC standards stress the importance of the practice learning environment (Nursing and Midwifery Council, 2009), however, there is a notable theory/practice gap between AElS and practice partners, specifically the lack of appropriately trained NIPE mentors to support students' practice development. Whilst this may have been previously accommodated within the clinical areas for the relatively small numbers of qualified midwives undertaking NIPE training, the significantly larger numbers of pre-registration students presents a problem in terms of ensuring adequate supervision and practice support. This was a prohibitive factor for some AElS, as many placements were at full student capacity. Thus despite the known benefits of expanding the NIPE training into the pre-regulation midwifery curriculum for student learning, service delivery and families (Townsend et al., 2004) many AElS are currently unable to implement this.

The findings of this study also showed that forward thinking AElS took proactive steps to support their practice partners by increasing the level of practice support for students through the role and activity of link lecturers. Resources were invested for midwifery lecturers to undertake NIPE training and to provide additional practice support as an interim measure, thus relieving pressure on clinical NIPE practitioners and enabling pre-registration students to achieve the necessary competencies. These AElS recognised that on the point of qualification, newly qualified midwives would be NIPE trained, making them very attractive to future employers. As a consequence, numbers of NIPE practitioners in practice partner trusts would increase annually, which in turn would increase the resources to support subsequent cohorts of pre-registration students.

Another barrier to some AElS adoption of NIPE training was the perception that current pre-registration programmes had no room to include it in the curriculum. However the findings revealed that all AElS provided a comprehensive and detailed list of topics in relation to neonatal health, wellbeing and surveillance as part of their standard undergraduate curricula (summarised in table 3). With some imagination and resourcefulness, it is possible that AElS could adapt their existing programmes, utilising current curriculum content to form the core of a NIPE programme.

The perceived benefits of including the NIPE as part of the pre-registration programme were similar to those reported in previous studies: Respondents reported that it enabled providers to better meet service demands and offer a more responsive maternity service. These findings echo earlier arguments for incorporating NIPE within the midwife's role (MacKeith, 1995; Michaelides, 1995; Seymour, 1995).

Variations in standards of supervision in practice and in practical assessments were identified. This is not surprising, since there are currently no national standards in relation to the assessment and supervision of NIPE practitioners. Findings showed that NIPE practitioners were permitted to support, supervise, verify and assess pre-registration students' NIPE skills in practice. Unlike the midwifery sign-off mentor, whose role is to assess students' midwifery skills and competencies, the NIPE is a role undertaken by members of the multidisciplinary team and crosses professional boundaries. This may present challenges in ensuring consistency in assessment of practice standards. Only one AEI reported grading the NIPE practice, all others reported that practice was assessed as pass/fail only.

The code (NMC 2015, p.7), states that it is the responsibility of the practitioner to *Maintain the knowledge and skills you need for safe and effective practice* (Nursing and Midwifery Council, 2015). The findings of this study revealed a variety of assessment strategies across different AEIs, including practice assessment, practice simulation, professional discussion, OSCE and online resources. A wide variation in academic levels and credit awards was also noted.

The number of NIPE examinations expected to be undertaken by pre-registration students varied significantly and some programmes had no set number. However, whilst a guide number of NIPES can provide useful direction for students, the premise that the individual is best placed to assess their own level of skills and competency is empowering for students as adult learners. Furthermore, the complexity of practice learning is multifaceted and is individual to each learner; it cannot be assured solely by achieving a defined number of examinations.

Conclusions

The findings of this study have highlighted some of the ongoing challenges of bridging the theory/practice gap in providing NIPE training as part of the standard pre-registration midwifery curriculum. Current national standards relate solely to the four screening components of the examination: heart, hips, eyes and testes (Public Health England, 2016; UK national screening committee, 2008). National standards for the preparation and assessment of practitioners to

perform the NIPE would not only reduce the current variation in practice identified by Rogers et al (2015), but may also mitigate against some of the perceived barriers identified in relation to the feasibility of including it in the pre-registration programme. In view of the findings and recommendations of the ENREN study (Townsend et al., 2004) together with previous evidence and current government policies highlighting the benefits of continuity of care (NHS England, 2016) it is concerning that so few AIE programmes are still reluctant to embrace preparations to include the NIPE in their pre-registration midwifery programmes.

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