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An investigation into resuscitation council UK (RC UK) neonatal life support (NLS) course outcomes

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ABSTRACT

Most newborns transition to extrauterine life without assistance. However, the World Health Organization reports that approximately 10 % of all newborns require some intervention at birth and estimate that .5 % will require cardiopulmonary resuscitation. In some instances, the obstetric and maternal history can inform the anticipation for resuscitation, but this is not always the case. Therefore, it is essential that health professional staff attending births are competent in resuscitation techniques of the infant. Initial skills are acquired during pre-registration education programmes and once registered, a health professional should undertake regular training to maintain their knowledge and skill. In the United Kingdom, the Newborn Life Support (NLS) course provides nationally recognised education accredited by the Resuscitation Council UK (RCUK). The number of NLS courses is dependent on the availability and goodwill of a multidisciplinary faculty. Anecdotally, the authors noticed that there was a smaller pool of nurse and midwife instructors to call upon when assembling NLS faculties. With the assistance of the RCUK, a retrospective audit was undertaken to investigate whether a difference in pass and instructor potential recommendation rates between professional groups could inform the debate. This audit identified a significant difference between medical practitioner and non-medical practitioner pass rates (94.7 % v 86.2 %, $p < 0.01$) and instructor potential recommendation rates (20.0 % v 11.8 %, $p < 0.01$), favouring medical practitioner candidates. The reasons for this difference are complex and not fully understood, though difference in pre-registration learning, career trajectory and support could explain some of the discrepancy. There needs to be further investigation to better understand the underlying reasons, and discussion on how this gap can be minimised or eliminated.

1. Introduction

1.1. Background

The need for resuscitation or supported transition at birth is often not predictable; any infant may develop problems during birth (Madar et al., 2021). Neonatologists as well as other members of the multidisciplinary team (MDT), including midwives, neonatal nurses, neonatal nurse practitioners (ANNPs), paramedics, anaesthetists and obstetricians may be required to help an infant at birth. Appropriate knowledge and skills in resuscitation of the newborn is recommended by the Royal Colleges of Paediatrics and Child Health (RCPCH), Obstetricians and Gynaecologists (RCOG), Anaesthetists (RCoA) and Midwives (RCM), for all healthcare professionals attending deliveries (Murch and Morris, 2014). The College of Paramedics Pre-Registration 6th Curriculum for paramedic education providers refer to NLS, demonstrating the importance of NLS pre and in hospital environments (College of Paramedics, 2024).

The importance of newborn resuscitation skills in staff attending births is highlighted in the Maternity Incentive Scheme (n.d.) and Saving Babies Lives: Version 3 by NHS England (2023a), recommending that all staff attending births should undertake newborn resuscitation education. Reports including Ockenden (2022), Kirkup (2015) and Cwm Taf (2019) further stress the need for sufficiently trained staff.

Candidate places for the NLS are in high demand. This has further intensified with the publication of the Core Competency Framework version 2 (NHS England, 2023b), containing a national directive that 90 % of all professionals present at birth require training in neonatal life support. Whilst the ideal situation would be for staff to attend an

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accredited NLS course, this is not practical. Hospitals seek to reach this level of proficiency with staff attending local annual basic newborn resuscitation training, which the Core Competency Framework stated should be delivered by RCUK accredited instructors. Whilst this represents best practice, there is a shortage of instructors, which presents a challenge across NHS Trusts (Resuscitation Council UK, 2024a).

1.2. The RCUK neonatal life support course

Launched in 1999, the Newborn Life Support (NLS) course focuses specifically on the resuscitation of the infant at birth (Resuscitation Council UK, 2024b). NLS teaches healthcare professionals essential practical skills and theoretical knowledge needed to best aid the newborn infant in an emergency. This one-day course is delivered in centres across the United Kingdom to over 6000 healthcare professionals annually, comprising lectures, practical skills stations and teaching simulations.

To pass the course, candidates are required to achieve 80 % in a multiple-choice question paper and demonstrate competent practice in a simulated scenario. Successful candidates receive a RCUK NLS provider certificate, valid for four years. Individuals who show exceptional ability and aptitude during their course, and have sufficient clinical experience prior to attending, can be considered as potential instructors. The process of progressing from an instructor potential (IP) to instructor status is summarised by Denning et al. (2024) in the Pocket Guide to Teaching for Clinical Instructors as a four-phase process. Phase 1 (preparation) commences with the IP recommendation, phase 2 involves attending a Generic Instructor Course, phase 3 as an Instructor Candidate (IC) where the specialist facilitation skills are practiced under supervision and phase 4 comprising continuous professional development as an Instructor. This process is well established in the resuscitation education community, providing a rigorous quality assured mechanism to maintain educational standards on a range of life support courses accredited by the Resuscitation Council UK and Advanced Life Support Group.

1.3. NLS faculty

NLS faculty configuration is multidisciplinary with medical practitioners, registered nurses and registered midwives, as mandated by the RCUK course regulations. There is a ratio of one instructor to three candidates, with one instructor for every eight candidates being medically qualified. Each faculty must contain at least one neonatal nurse and one midwife, with the final faculty comprising 8–12 instructors (Resuscitation Council UK, 2024a). NLS instructors must teach on at least two NLS provider courses each year to maintain instructor status. Typically, there are no financial benefits for their time, and each instructor may choose at which course centre they wish to teach, usually in their own time or as part of their substantive employment. The delivery of an RCUK NLS course is dependent on the availability and the goodwill of a multidisciplinary faculty to meet regulations, which can be challenging.

Failure to source the requisite non-medical members of faculty can result in courses being cancelled. In exceptional circumstances, a course can proceed without nursing or midwifery presence, though this is not normal practice. The authors have observed this predicament in their regions and beyond.

Cancelling courses or proceeding with a faculty that does not have representation from all professional groups presents challenges for candidates and instructors. During the establishment of this study, a shared observation was discussed between the authors; there seems to be a disparity between the number of non-medical IP's and the availability of non-medical instructors. A stable instructor cadre is vital to ensure that faculties can meet the regulated configuration. Therefore, the aim of this study is to explore the pass rates of medical and non-medical practitioner candidates, and to establish the IP recommendation rates between professional groups attending NLS courses, to inform further debate.

2. Methods

This article reports a retrospective analysis of the NLS course pass and instructor recommendation rates. Anonymised NLS course outcome data from April 2021 to March 2023 (24 months) was kindly provided by RCUK as a Microsoft Excel™ spreadsheet. Prior to analysis, this data set was reviewed by an author (ARW) to remove obvious errors. Statistical analysis was undertaken using SPSS Statistics v29 applying non-parametric Chi-Square tests to the data. Ethical approval was provided by the University of Derby College of Health, Psychology and Social Care Research Ethics Committee ETH2324-2153.

In total, 6646 candidates were reported as attending an NLS course during the study period. However, the file included incomplete records, and data from Scotland, Wales and Northern Ireland. Data from course centres outside England were excluded from analysis because the small number of candidates and centres may compromise anonymity. To further enhance the integrity of the study where it was not possible to establish the profession or outcome, incomplete data was also excluded.

3. Findings

Between April 2021 and March 2023, there were 92 course centres providing NLS in England, offering 382 courses to 5700 candidates over a two-year period. The majority of candidates attending were medical practitioners, registered midwives, or registered nurses (n = 5666) and these three health professional groups were the subject of this study (Table 1). The "Other" category (n = 34) comprised medical students (2), a nursery nurse (1), a nursing associate (1), operating department practitioners (6), paramedics (15), physician's associates (7) and student midwives (2).

As our study objective was to investigate the pass and IP recommendations of those professions' (medical practitioners, registered nurses, registered midwives) mandate as part of a RCUK NLS faculty to comply with course regulations, our analysis focused on these professional groups. To simplify analysis of course pass and IP rates, the data were grouped by medical practitioner and non-medical practitioner, though each profession is noted in Table 1).

A Pearson's chi-squared test was used to determine whether there was a significant difference between:

a) medical and non-medical candidates who passed
b) medical and non-medical candidates recommended as instructor potential

3.1. NLS pass and instructor potential (IP) recommendation rate

Analysis of the pass rate identified 94.7 % of medical practitioners, and 86.3 % of non-medical practitioner candidates completed the course successfully. A chi-squared test identified a statistically significant difference ($p < 0.01$) in the pass rate, favouring medical practitioners –Table 2.

Analysis of the IP recommendation rate identified 431 (20.0 %) of

Table 1
– NLS course candidates in England between April 2021 and March 2023.

		Passed	IP recommendation
Medical practitioner	2155 (38.0 %)	2041 (94.7 %)	431 (20.0 %)
Non-medical practitioner	3511 (62.0 %)	3030 (86.3 %)	414 (11.8 %)
Midwife	1748 (30.9 %)	1471 (84.2 %)	213 (12.2 %)
Nurse	1763 (31.1 %)	1559 (88.4 %)	201 (11.4 %)
Total	5666	5071 (89.5 %)	845 (14.9 %)

Table 2
– Medical and non-medical candidates NLS course outcome.

	Attended & PASS (%)	Attended & FAIL	TOTAL
Medical practitioner	2041 (94.7 %)	114 (5.3 %)	2155
Non-medical practitioner	3030 (86.3 %)	481 (13.7 %)	3511
Total	5071 (89.5 %)	595 (10.5 %)	5666
	Pearson Chi- Square <.001		

medical practitioner candidates, and 414 (11.8 %) of non-medical practitioner candidates. A chi squared test identified a statistically significant difference ($p < 0.01$) in the instructor potential recommendation rate, favouring medical practitioners –Table 3.

4. Discussion

The NLS course, in common with other RCUK life support courses and similar learning, adopts a structured standardised assessment process (Dupre and Naik, 2024; Renesme et al., 2022;Resuscitation Council UK, 2024a). Faculty use this process to determine whether a candidate demonstrates the necessary skill and knowledge to be considered a safe practitioner, with the same assessment applied irrespective of their professional background, experience, or seniority. The reasons for the difference in NLS pass rates between medical and non-medical practitioners are likely to be complex. The motivation to progress and the education undertaken by different health professionals may be factors and are considered below. Similarly, the finding that if you attend an NLS course as a medical practitioner you are nearly twice as likely to be identified as an instructor potential is puzzling as all registered health professional undertake University level pre-registration education. This phenomenon requires further exploration which is beyond the scope of this study. However, this discussion explores two potential areas that may impact the interdisciplinary outcome variance: motivation and education.

4.1. Motivation

There is a professional requirement from regulators for healthcare professionals to maintain their knowledge and skill in their field (General Medical Council, 2024a; Health and Care Professions Council, 2024; Nursing and Midwifery Council, 2024). Motivation to pass this course is present for all who attend, though may be more important for medical practitioners. Junior doctors require NLS provider status to progress in their training, neonatal nurses who hold Qualifications in Specialty (QIS) are expected to be NLS providers and it is compulsory that midwives in charge of labour wards and in the community setting hold NLS provider status (British Association for Perinatal Medicine, 2012; NHS England n.d.). In addition, all staff employed in neonatal environments should have a professional and personal responsibility to be competent in providing acute resuscitation stabilisation of infants.

The motivation to become an instructor may be subject to variation between professional groups. The career pathway from junior doctor to consultant is mapped out (RCPCH Progress+, 2023), with paediatric and neonatal life support specified in draft guidance for entry onto the paediatric specialist register (General Medical Council, 2024b). By default, becoming an NLS instructor can be considered desirable as junior doctors progress through their specialty. There are further extrinsic motivational factors for medical professionals; allotted Continuing Professional Development (CPD) hours are mandated annually as well as a monetary allowance for individuals to spend on education. Conversely, nursing and midwifery career trajectories are largely determined by individual action highlighted in a report by the Institute for Fiscal Studies (2024). Ironically the reports title suggests the population under investigation are registered nurses, whose progression depends on role, age ethnicity though goes on to report midwives appear to progress in pay bands more quickly, perhaps reflecting their role. The Royal College of Nursing, n.d. provide general advice on progressing your career though the onus is on the individual. Obtaining an IP nomination may not be a primary objective for non-medical candidates, particularly if this is not overtly associated with career progression.

Furthermore, the time required to become a full instructor, and the subsequent teaching commitment may be viewed as a burden, as nurses and midwifery CPD time is not protected or subsidised (Buchan et al., 2019). It is dependent on each individual NHS Trust to decide what quota of study leave or funds nurses and midwives can access; organisational can culture play an important role towards professional development of staff (Mlambo et al., 2021).

Table 3
– Medical and non-medical candidates NLS IP recommendation.

	IP – YES (%)	IP – NO	TOTAL
Medical practitioner	431 (20.0 %)	1724 (80 %)	2155
Non-medical practitioner	414 (11.8 %)	3097 (88.2 %)	3511
Total	845 (14.9 %)	4821 (85.1 %)	5666
	Pearson Chi- Square <.001		

4.2. Educational

In the UK, nursing and midwifery education is delivered at Approved Educational Institutions (AEIs) based in a health and social care setting. These undergraduate courses take a minimum of three years, though graduates can undertake a two-year postgraduate degree to become a registered nurse or midwife. A registered nurse can also undertake a shortened course to become a midwife, though this model is less common now. A registered nurse requires the QIS training to become a neonatal nurse, in which modular components are assessed based upon written essays. As with registered nurses, midwives' further education also is influenced by the individual and employer, rather than a structured pathway to a senior position.

To become a medical practitioner registered with the General Medical Council (GMC), a medical student will have undertaken a four- or five-year undergraduate programme, and on completion hold provisional registration for the first year of employment. Once in specialty training, medical practitioners are required to pass their membership exams for their respective Royal Colleges, consisting of both written exams and simulation-based assessment (Issenberg et al., 2005; Lumsden et al., 2015). As this professional group cross specialties during training, this may involve attending at least one or more of the other RCUK provider courses (e.g. European Paediatric Advanced Life Support (EPALS), Paediatric Immediate Life Support (PILS)), granting them familiarity with the RCUK teaching and assessment format.

When considering the pass rates of medical and non-medical practitioners in this study, not only the length of the respective courses, but also the educational nuances because of varying exposure to simulation-based learning and assessment, may have an influence. This may also affect the IP recommendations as medical practitioners are more socialised to learning through simulation and may be more familiar with RCUK course format.

5. Conclusion

The need for well-trained healthcare professionals who attend deliveries is clear. The impact of recent public enquiries into maternity services and spotlight on proficiency of those attending births, perpetuates this agenda for NHS. The provision of neonatal resuscitation training is founded on either the attendance of an RCUK NLS course or locally provided training, ideally by accredited NLS instructors. The demand for NLS courses is higher than the supply, due in part to a seemingly smaller pool of available non-medical instructors. This study has identified a variance in the pass and instructor potential recommendation rates on the NLS course, which may be contributing to the reduced availability of NLS courses with a multi-disciplinary faculty.

The incongruence between the number of non-medical IPs and cadre of non-medical instructors, raises the question: are there factors impacting on those IP nurses and midwives progressing to instructor candidate and full instructor status? This study acknowledges that the reasons for the disparity between pass and IP rates per professional group are likely to be complex, with more research recommended to explore this issue.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

NMcC is a voluntary elected member of the Resuscitation Council UK NLS/ARNI Subcommittee.

CB is a voluntary elected member of the Resuscitation Council UK NLS/ARNI Subcommittee.

ARW is a voluntary elected member of the Resuscitation Council UK Executive Committee.

Appendix 1

frequencies

Notes

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Statistics

		Profession	Doctor or Non-Doctor	PASS/FAIL	IP YES or NO
N	Valid	5666	5666	5666	5666
	Missing	0	0	0	0

Frequency Table

Profession

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor	2155	38.0	38.0	38.0
	Midwife	1748	30.9	30.9	68.9
	Nurse	1763	31.1	31.1	100.0
	Total	5666	100.0	100.0	

Doctor or Non-Doctor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor	2155	38.0	38.0	38.0
	Non-Doct	3511	62.0	62.0	100.0
	Total	5666	100.0	100.0	

PASS/FAIL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fail	595	10.5	10.5	10.5
	Pass	5071	89.5	89.5	100.0
	Total	5666	100.0	100.0	

IP YES or NO

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4821	85.1	85.1	85.1
	Yes	845	14.9	14.9	100.0
	Total	5666	100.0	100.0	

Bar Chart

Crosstabs

Notes

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	Cases					
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Doctor or Non-Doctor * PASS/FAIL	5666	100.0 %	0	.0 %	5666	100.0 %

Doctor or Non-Doctor * PASS/FAIL Crosstabulation

			PASS/FAIL		Total
			Fail	Pass	
Doctor or Non-Doctor	Doctor	Count	114	2041	2155
		% within Doctor or Non-Doctor	5.3 %	94.7 %	100.0 %
		% within PASS/FAIL	19.2 %	40.2 %	38.0 %
		% of Total	2.0 %	36.0 %	38.0 %
	Non-Doct	Count	481	3030	3511
		% within Doctor or Non-Doctor	13.7 %	86.3 %	100.0 %
		% within PASS/FAIL	80.8 %	59.8 %	62.0 %
		% of Total	8.5 %	53.5 %	62.0 %
Total		Count	595	5071	5666
		% within Doctor or Non-Doctor	10.5 %	89.5 %	100.0 %
		% within PASS/FAIL	100.0 %	100.0 %	100.0 %
		% of Total	10.5 %	89.5 %	100.0 %

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	100.488[a]	1	<.001		
Continuity Correction[b]	99.595	1	<.001		
Likelihood Ratio	109.930	1	<.001		
Fisher's Exact Test				<.001	<.001
N of Valid Cases	5666				

a.0 cells (.0 %) have expected count less than 5. The minimum expected count is 226.30.

Notes

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Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Doctor or Non-Doctor * IP YES or NO	5666	100.0 %	0	.0 %	5666	100.0 %

Doctor or Non-Doctor * IP YES or NO Crosstabulation

			IP YES or NO		Total
			No	Yes	
Doctor or Non-Doctor	Doctor	Count	1724	431	2155
		% within Doctor or Non-Doctor	80.0 %	20.0 %	100.0 %
		% within IP YES or NO	35.8 %	51.0 %	38.0 %
		% of Total	30.4 %	7.6 %	38.0 %
	Non-Doct	Count	3097	414	3511
		% within Doctor or Non-Doctor	88.2 %	11.8 %	100.0 %
		% within IP YES or NO	64.2 %	49.0 %	62.0 %
		% of Total	54.7 %	7.3 %	62.0 %
Total		Count	4821	845	5666
		% within Doctor or Non-Doctor	85.1 %	14.9 %	100.0 %
		% within IP YES or NO	100.0 %	100.0 %	100.0 %
		% of Total	85.1 %	14.9 %	100.0 %

Chi-Square Tests

	Value	df	A[a]ymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided[a]
Pearson Chi-Square	70.9[b]7[a]	1	<.001		
Continuity Correction[b]	70.261	1	<.001		
Likelihood Ratio	69.140	1	<.001		
Fisher's Exact Test				<.001	<.001
N of Valid Cases	5666				

a. 0 cells (.0 %) have expected count less than 5. The minimum expected count is 321.39.
b. Computed only for a 2x2 table.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	−.112	<.001
	Cramer's V	.112	<.001
N of Valid Cases		5666	

References

British Association for Perinatal Medicine, 2012. Matching knowledge and skills for qualified in specialty (QIS) neonatal nurses (2012) Available at: https://www.england.nhs.uk/long-read/core-competency-framework-v2-minimum-standards-and-stretch-targets/. (Accessed 3 September 2024).

Buchan, J., Charlesworth, A., Gershlick, B., Seccombe, I., 2019. A Critical Moment: NHS Staffing Trends, Retention and Attrition. The Health Foundation. Available at: https://www.health.org.uk/sites/default/files/upload/publications/2019/A%20Critical%20Moment_1.pdf. (Accessed 28 November 2024).

College of Paramedics, 2024. Paramedic Curriculum (6th Edition). Available at: https://collegeofparamedics.co.uk/COP/ProfessionalDevelopment/Developing%20a%20New%20Paramedic%20Curriculum.aspx. (Accessed 25 November 2024).

Cwm Taf, 2019. Independent review of neonatal services at prince charles hospital. Available at: https://www.gov.wales/independent-review-neonatal-services-prince-charles-hospital. (Accessed 3 September 2024).

Denning, K., Mackie, K., Charters, A., Lockey, A., 2024. The Pocket Guide to Teaching for Clinical Instructors, fourth ed. Wiley, Oxford, UK.

Dupre, J., Naik, V., 2024. The role of simulation in high-stakes assessment. BJA Education 21 (4), 148–153. https://doi.org/10.1016/j.bjae.2020.12.002.

General Medical Council, 2024a. Continuing professional development (CPD). Available at: https://www.gmc-uk.org/registration-and-licensing/managing-your-registration/revalidation/guidance-on-supporting-information-for-revalidation/continuing-professional-development. (Accessed 3 September 2024).

General Medical Council, 2024b. Paediatrics speciality specific guidance (SSG). Available at: https://www.gmc-uk.org/-/media/documents/sat—ssg—paediatrics—dc2323_pdf-48455478.pdf. (Accessed 27 November 2024).

Health and Care Professions Council, 2024. Standards of conduct, performance and ethics. Available at: https://www.hcpc-uk.org/standards/standards-of-conduct-performance-and-ethics/. (Accessed 26 September 2024).

Institute for Fiscal Studies, 2024. Progression of nurses within the NHS. IFR Report R310 Available at https://ifs.org.uk/sites/default/files/2024-04/Progression-of-nurses-within-the-NHS-IFS-Report-R310.pdf. (Accessed 27 November 2024).

Issenberg, S.B., McGaghie, W.C., Petrusa, E.R., Lee Gordon, D., Scalese, R.J., 2005. Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. Med. Teach. 27 (1), 10–28. https://doi.org/10.1080/01421590500046924. PMID: 16147767.

Kirkup, B., 2015. The Report of the Morecambe Bat Investigation 2015. The Stationery Office, London, UK. ISBN: 9780108561306 Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/408480/47487_MBI_Accessible_v0.1.pdf. (Accessed 28 November 2024).

Lumsden, C.J., Byrne-Davis, L.M., Mooney, J.S., Sandars, J., 2015. Using mobile devices for teaching and learning in clinical medicine. Arch. Dis. Child Educ. Pract. Ed. 100 (5), 244–251. https://doi.org/10.1136/archdischild-2014-306620.

Madar, J., Roehr, C.C., Ainsworth, S., Ersdal, H., Morley, C., Rüdiger, M., Skåre, C., Szczapa, T., Te Pas, A., Trevisanuto, D., Urlesberger, B., Wilkinson, D., Wyllie, J.P., 2021. European Resuscitation Council Guidelines 2021: newborn resuscitation and support of transition of infants at birth. Resuscitation 161, 291–326. https://doi.org/10.1016/j.resuscitation.2021.02.014. Epub 2021 Mar 24. PMID: 33773829.

Mlambo, M., Silén, C., McGrath, C., 2021. Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. BMC Nurs. 20, 62. https://doi.org/10.1186/s12912-021-00579-2.

Murch, H., Morris, I., 2014. Training and confidence levels among health professionals attending newborn deliveries. Infant 10 (3), 97–100.

NHS England, 2023a. Saving babies lives: version 3. Available at: https://www.england.nhs.uk/long-read/saving-babies-lives-version-3/. (Accessed 3 September 2024).

NHS England, 2023b. Core competency framework v2: minimum standards and stretch targets. Available at: https://www.england.nhs.uk/long-read/core-competency-framework-v2-minimum-standards-and-stretch-targets/. (Accessed 3 September 2024).

NHS England, Workforce, training and education. Qualifications in specialism Available at: https://www.hee.nhs.uk/our-work/capitalnurse/workstreams/qualifications-specialisms#:~:text=Qualification%20in%20specialisms%20(QIS)%20is,nurses%20to%20develop%20after%20preceptorship (Accessed 3 September 2024).

Nursing and Midwifery Council, 2024. Read the code online. Available at: https://www.nmc.org.uk/standards/code/read-the-code-online/. (Accessed 3 September 2024).

Ockenden, D., 2022. The Shrewsbury and Telford Hospital NHS Trust Ockenden report: findings, conclusions and essential actions from the independent review of maternity services. Available at: https://www.ockendenmaternityreview.org.uk/wp-content/uploads/2022/03/FINAL_INDEPENDENT_MATERNITY_REVIEW_OF_MATERNITY_SERVICES_REPORT.pdf. (Accessed 4 September 2024).

Royal College of Nursing, Career progression tips Available at: https://www.rcn.org.uk/Professional-Development/Your-career/Nurse/Career-Crossroads/Career-Progression (Accessed 27 November 2024).

RCPCH Progress+, 2023. Core syllabus for paediatric training. Available at: https://www.rcpch.ac.uk/sites/default/files/2023-10/ProgressPlus-Generic-Syllabus-Core-v1.pdf. (Accessed 5 September 2024).

Renesme, L., Merched, M., Tandonnet, O., Naud, J., 2022. Newborn Life Support course: does it make me more confident when resuscitating a newborn? J. Matern. Fetal Neonatal Med. 35 (25), 6561–6565. https://doi.org/10.1080/14767058.2021.1918087.

Resuscitation Council UK, 2024a. Resuscitation Council UK statement on "following on from saving babies' lives version three and NHS England Core competency framework version two". Available at: https://www.resus.org.uk/sites/default/files/2024-02/RCUK%20statement%20on%20Resuscitation%20annual%20updates_0.pdf. (Accessed 5 March 2025).

Resuscitation Council UK, 2024b. NLS (newborn life support) course. Available at: https://www.resus.org.uk/training-courses/newborn-life-support/nls-newborn-life-support. (Accessed 5 March 2025).