Critical Care Networks-National Nurse Leads

National Standards for Critical Care Nurse Education

A framework to improve
educational outcomes & quality of care

Produced by
Andrea Baldwin: Chair, Critical Care Networks National Nurse Leads group (CC3N) on behalf of the Critical Care Nurse Education Review Forum (CCNERF).
email: andrea.baldwin@lthtr.nhs.uk
Telephone: 01257 245483

Acknowledgements

This document has been produced by CC3N, with support from the British Association of Critical Care Nurses, the Intensive Care Society Nursing AHP Committee, the Royal College of Nursing Critical Care Inflight Forum, the Independent Healthcare Advisory Services and representatives from Higher Educational Institutes.

Thanks to all for their time and commitment in the production of this document.

Key intended audience

- Members of all healthcare professional groups
- Commissioners of Critical Care Education and Services
- Providers of Critical Care Services
- Employers of Critical Care Nurses
- Critical Care Networks
- Higher Education Providers
- Deaneries and Workforce Development Directorates
- Regulators, advisory groups, professional bodies and trade unions within the health sector
- Patients and the lay public

Published January 2012, review date 2014.

This booklet created for CC3N by Giraffics Ltd. mike.giraffics@googlemail.com

Foreword

Since the emergence of intensive care units in the United Kingdom it has been recognised that there is a need to ensure the critically ill patient is cared for by a group of professional nurses that have the appropriate specialist knowledge and skill set to assess, implement and evaluate patients and related care interventions.

To ensure equity of care delivery, it makes sense to strive for a critical care nursing workforce that is developed to common standards, so that the quality of that workforce can be assured across geographical boundaries.

This document aims to provide a set of standards and recommendations for post registered nursing critical care education that should be considered and applied to support that vision.

It should be view as guidance to aid discussion between commissioners, healthcare and educational providers to facilitate the development of local training and educational programmes that meet today's ever changing healthcare demands.

Executive Summary

In 2008, the Critical Care Networks – National Nurse leads (CC3N) established a Critical Care Nurse Education Review Forum (CCNERF) to identify and articulate the concerns for adult critical care nurse education. There were perceived fundamental differences in the quality of critical care educational programmes and ensuing staff knowledge and clinical competency. Service managers felt these were impacting on nurse recruitment, quality of care delivery and importantly there was the inability to rely on an overall standard of knowledge, which prevented critical care educational awards being transferable across geographical areas.

The overall aim of this document is to provide a framework to guide Critical Care Lead Nurses/Managers, Higher Educational Institutes (HEI's) and Independent Sector organisations to develop critical care educational programmes, improve educational outcomes and ultimately quality of care, by producing critical care nurses who can demonstrate that they are competent to nationally agreed occupational standards. This document will also evidence and support the educational recommendations available from other global critical care nursing organisations. By identifying and articulating the core critical care educational standards for post registered adult nurses; through effective implementation they will facilitate the development of equitable, competent, safe critical care nurse practitioners that have recognised transferability of knowledge and skills.

The objectives of this paper were:

❶ To establish the current position with regard to critical care nurse education, this was achieved through undertaking:
• A survey on the current education and training programmes provided by HEIs and available to adult critical care unit staff in England (Appendix 1).
• A review of the critical care nursing educational competencies and standards employed in critical care units across England (Appendix 2).
• Analysis of the type of critical care nurse training programmes (Appendix 3).
N.B. For the purposes of this paper the scope of this review was limited to England, but is not exclusive to other areas within the United Kingdom.

❷ To agree a set of 'Standards and Principles' for critical care education.

❸ To identify a core curriculum for programmes of critical care education.

❹ To make recommendations for action to secure a competent critical care nursing workforce.

Survey results validated CCNERF's hypothesis that fundamental differences in the quality and type of critical care education programmes do indeed exist, which can only result in a fragmented knowledgeable critical care nursing workforce; this supported the need for the development of standards related to critical care education.

CCNERF proceeded to set the required Standards and Principles for Critical Care Nurse Education through members engaging with colleagues within their sphere of expertise, and continues to support the idea that critical care nurse education should occur within HEIs. These standards when applied will:

• Provide a framework to guide the creation of critical care curricula.

• Should be used to assist effective dialogue between academic institutes, commissioners of education and purchasers of their services.

• Ensure programmes are designed and delivered to match clinical practice with theory.

Through this collaborative work, CCNERF hopes it will create critical care educational programmes that guarantee a knowledgeable and competent sustainable nursing workforce for the future.

It is not the purpose of this document to dictate a specific academic programme of education be provided by HEI's; however in order to work towards the goal of standardising knowledge and clinical competency for critical care nurses, CCNERF's vision is that the Core Curriculum should form the basis on which to build critical care educational programmes. It presents key areas for developing the critical care nurse (Appendix 5). The intention is to ensure a transition from the variety of programmes and clinical content, to one where provision of the education and training systems for critical care is comparable. This will allow transferability of the workforce across conurbations and reassure healthcare managers and commissioners of the standard of critical care nurse education.

It is not within the remit of this paper to identify the specific clinical competencies that may form part of educational programmes or how they should be assessed, although these should be developed as a matter of urgency; however CCNERF recognises the value of flexible and diverse learning environments and the need for greater parity in assessment processes.

This document presents seven key recommendations to address the presenting issues. This are not presented in any specific order of priority, but should be viewed as a whole:

Recommendation 1 – Post registration courses for critical care nurses should follow the set of key Standards and Principles. They should be utilised to support other audit or review processes associated with academic standards. In applying these there will be the opportunity for equity in course delivery and outcomes.

Recommendation 2 – The identified core critical care curriculum should form part of all critical care programmes.

Recommendation 3 – A nationally recognised transferrable 'Award in Critical Care Nursing' should be at least a graduate level award at academic Level 6 with a minimum of 60 credits, e.g. 'Graduate Certificate in Critical Care Nursing'.

Recommendation 4 – Nurses may be required to meet critical care National Occupational Standards and should work towards core clinical critical care competencies as they emerge. These should be developed as a matter of urgency to support the educational standards and critical care curriculum, and will be pivotal for ensuring a nationally transferrable competent workforce. HEI's are advised to refer to the NOS and the up-and-coming critical care competencies to support the development of their critical care programmes.

Recommendation 5 – Assessors supporting a nurse on a critical care programme of study need to be a competent critical care nurse and to have completed a programme of study that meets the requirements for mentorship (NMC, 2008). As a minimum all assessments should be made against the performance criteria in emerging critical care competencies and linked to NOS in order to ensure consistency and to make assessments more objective.

Recommendation 6 – Strategies to monitor the success of changing critical care educational programmes. Workforce knowledge and clinical competency must match the requirements of the service provided.

Recommendation 7 – Commissioners of education are advised to review the Standards and Principles for Critical Care Education and utilise the content to aid and support the development of national quality standards for critical care education.

CCNERF believe a need has been identified to ensure that post registered nurses are trained and educated by programmes of education that have the appropriate specialist skills, which address the needs of the critically ill patient. There is a need to ensure we have a nursing workforce that allows transferability of skills across conurbations, and that critical care managers have confidence in the quality of knowledge and competency of those skills for the nurses they are employing. Through working collaboratively and applying the recommendations we hope this document goes some way towards making that a reality, although there is a recognition that work is required urgently to identify those national competencies that will ensure a truly transferrable critical care nursing workforce.

Standards and Principles for Post Registration Critical Care Courses

CC3N and contributing organisations recommend that these Standards and Principles be used as a reference point to audit/review critical care educational programmes available from HEIs. They should be viewed as a framework to reassure both healthcare and academic providers that educational provision is meetings the needs of the critical care workforce, and as such are not restrictive or totally inclusive.

1. Educational Programmes should:
1.1 Be accessible to post registered professionals (nurses) working in a critical care environment
1.2 Be responsive to the needs of the service through a modular & flexible approach
1.3 Include all stakeholders in development and delivery strategies
1.4 Ensure continuity, consistency and sustainability
1.5 In accordance with the Framework for Higher Education Qualification (FHEQ) provide a graduate certificate at academic Level 6 with a minimum of 60 credits, to be recognised as a nationally transferrable 'award' or equivalent title, in critical care nursing. For bachelor's degree with honours, at level 6, the qualification should also meet the expectation of the degree with honours qualification benchmark.
1.6 Work towards delivery of post graduate certificates at academic level 7 post 2012 in accordance with national recommendations
1.7 Allow delivery by a variety of methods
1.8 Allow opportunities for recognition of previous education, knowledge or skills through Accreditation of Prior and Experiential Learning (AP(e)L) processes
1.9 Take into account any nationally recognised competency frameworks. Prepare students to meet nationally recognised occupational standards for critical care.

NB. CCNERF is aware other critical care programmes may be provided by HEIs at Level 6 with less than 60 credits.

2. The Curriculum should:
2.1 Consist of a standard core content of learning, designed to achieve set learning outcomes
2.2 Assess both theoretical knowledge and practical skills
2.3 Generate transferable evidence
2.4 Have holistic content which is speciality specific
2.5 Have the ability to be mapped against the Knowledge & Skills Framework (KSF)
2.6 Typically enable attainment of 'qualification' within 12 months/academic year, up to a max. of 2 years under extenuating circumstances. (This may be agreed between healthcare & academic providers to meet local regulations)
2.7 Be matched locally against QAA descriptors.
2.8 Be supported by Critical Care Networks, where they exist.

3. Assessment Processes should:
3.1 Include theory and practice / competence elements
3.2 Have a standard framework of nationally recognised occupational standards/competencies
3.3 Include robust local strategies that address issues related to student & mentor failure
3.4 Have clinical mentors who are qualified assessors with a critical care course and / or appropriate experience.

4. Quality Monitoring procedures should include:
4.1 Audits of courses and their outcomes by HEIs
4.2 Local formal stakeholder meetings to evaluate course content and ensuing workforce development
4.3 Educational audits to assess suitability of the learning environment (NMC 2004)

5. SPECIFIC RESPONSIBILITIES OF INDIVIDUALS

5.1 Academic Providers should:
5.1.1) Be proficient in theory, including research and evidenced based practice .. And/or
5.1.2) Be clinically safe & competent with relevant practical expertise.

5.2 Students must:
5.2.1) Hold a professional post-registration certificate in nursing.
5.2.2) Successfully complete a period of preceptorship, as locally agreed, in a relevant area prior to commencing a critical care programme of education
5.2.3) Complete a minimum number of clinical hours during the course of the programme (18 hours a week).
5.2.4) Self funding staff should provide academic providers with formal recognition from their critical care manager on their suitability for study.

5.3 Sponsoring Organisations should strive towards:

5.3.1) Providing support mechanisms

❶ Provide learners with supernumerary study time.

❷ 40% of learners clinical practice hours should allow for contact with a mentor/supervisor over the duration of the programme. This will allow for supported clinical practice, review and assessment of personal progress for the duration of study.

❸ CCNERF recommends 200 hours of study leave for a 60 credit course, which equates to 7.14 hours/week over a 28 week period of academic study. Specifically in academic terms for a 60 credit programme, the normal study time for a module is 150 hours per 15 credits. This equates to 600 hours of student study per academic year for the recommended 60 credit course. It is likely that there will be approximately 25 hours / 15 credits of classroom/tutorial time and 25 hours/ 15 credits of directed study with a blended learning approach, reinforced by another 100 hours of student self-directed study.

5.3.2) Ensuring learners, under normal circumstances, have a minimum of 80% attendance on educational programmes

5.3.3) A tripartite selection process which includes a collaborative approach between the sponsoring organisation, academic provider and learner

5.3.4) Securing funding from appropriate NHS organisations and other educational sponsors, where this is available.

5.3.5) Supporting clinical placement to facilitate learner development and achievement of outcomes

5.4 Mentors/Assessors must:

5.4.1) Meet the standards of regularity bodies (NMC, 2008)

5.4.2) Demonstrate ongoing professional development / competency within critical care

5.4.3) Be approved by managers

5.5 Healthcare Managers/Employers should:

5.5.1) Support a programme of professional development

5.5.2) Participate in workforce Training Needs Analysis exercises

5.5.3) Have an identified workforce development strategy specifically for critical care staff

5.5.4) Designate a Lead Nurse with responsibility for developing and implementing a critical care educational strategy. Ideally a supernumerary Practice Educator or equivalent.

Introduction

Since the demise of the English National Board (ENB) in 2002, there have been growing concerns voiced across the critical care community of the variability and types of awards available between post registration critical care courses, their outcomes and the increasing difficulties in transferability of the nursing workforce across conurbations.

The ENB was disbanded when the Nursing & Midwifery Council (NMC) was formed. Statutory responsibility for quality assurance of education programmes was assumed by the NMC and although the ENB was responsible for the framework of professional development programmes, the NMC has no such accountability and this has passed directly to the Higher Education Institutions (HEIs); these institutions primarily decide upon the content and format of educational programmes within their localities and hence may vary. Students completing courses generally receive an award from the respective HEI. These programmes of education are not endorsed or recorded by the NMC, nor is there any other central organisation that holds information regarding where or how critical care programmes are offered and importantly to what standard.

Intensive Care Units (ICUs) relied on the ENB100 General Intensive Care Course to provide a robust standard of education for its nursing staff, which was recognised as transferable and could be depended on to inform recruitment and promotional decisions, as well as to reassure managers and patients that staff were trained to an acknowledged level of competence. Ten years on and it is still this course that critical care managers refer to as the 'educational standard' to aspire to.

Through collaboration between critical care organisations and relevant stakeholders this report validates these issues and provides recommendations for adult critical care nurse education, which should be referred to in order to meet today's modern healthcare services.

Supporting Evidence

United Kingdom Developments

In April 1999, the Department of Health (DOH) established a review of adult critical care services, and invited an expert group to develop a framework for the future organisation and delivery of critical care. The group reported their findings in Comprehensive Critical Care (DOH 2000) and identified the need to redesign and improve the standard of critical care services, and central to this was the need for a competent workforce. The report highlighted the difficulties in the recruitment and retention of the necessary trained staff and in having professional training and development programmes that do not match the needs of individuals or the service.

Further more it stated, "Human resource issues lie at the very heart of the provision of critical care services. No amount of equipment can compensate for the lack of appropriately trained staff." They concluded, "…each critically ill patient, wherever they are located in the hospital should have skilled critical care nursing available either to care directly for them, or to advise on the care required to meet their needs."

In 2005 the DOH followed this up with the publication of best practice guidance produced by The Critical Care Stakeholder forum 'Quality Critical Care - Beyond Comprehensive Critical Care' (DOH 2005), which again emphasised the need for an appropriately trained and competent workforce, stating "an effective, quality service can only be delivered by an appropriately skilled workforce". This report also emphasised the importance of agreed competencies for critical care staff and that by having agreed standard competencies, providers and commissioners will be able to identify whether their staff are skilled, trained and equipped to provide care in increasingly demanding situations. The Skills for Health (SfH) work on establishing a competency framework supports this report, and work is in progress to identify a set of National Occupational Standards (NOS) that could be aligned to critical care staff.

The Cheshire and Mersey Critical Care Network (CMCCN) were one of many who considered the presenting issues to be an unsatisfactory and potentially unsafe situation. Employers had no way of knowing the level of competency of staff who had attended critical care courses from a variety of geographical sites across the country. Like all the Critical Care Networks they identified the need to improve the quality, productivity and effectiveness of the service to critically ill patients, which could be achieved through an appropriately educated workforce.

Continued on next page

Working in partnership with SfH, CMCCN identified a framework of NOS that could be used not only for the nursing workforce, but also the wider non-medical critical care team. SfH believe "the NOS will provide the foundation of a transferable education and training package, with clear standards, to support the development of a competent critical care workforce" (Jordan and Glennon, 2010). NOS focus' on what an individual needs to be able to do in practice, not only the knowledge and understand to work effectively, and are indicatively linked to the Knowledge and Skills Framework (KSF). HEI's are advised to refer to the NOS to aid the development of their critical care programmes. Further information on career framework levels and related NOS, is available at www.skillsforhealth.org.uk

In light of National Health Service (NHS) reforms, critical care has a number of challenges in ensuring it has the ability to deliver services fit for purpose. Undoubtedly there is a need to ensure sound development and delivery of education and training if organisations are to meet the requirements of the National Institute for Clinical Excellence (NICE) in delivery of safe quality care; However 'there also needs to be closer matching of the learner's needs, values and aspirations with those of service providers and workforce planners' (Scholes and Endacott, 2002).

More recently the NHS has specifically recognised the need for change to the education and training of the healthcare workforce, aiming for a system that is driven by employers where staff development is 'critical to the delivery of safe, high quality care' (Field, 2011).

Global Standards Development

Critical or Intensive Care is a complex specialty developed to serve the diverse health care needs of patients and their families with actual or potential life threatening conditions (World Federation of Critical Care Nurses, WfCCN 2005). Concerns related to critical care nursing standards of education have been raised across the world; the intention of this document is to evidence and support the recommendations available from other global critical care nursing organisations.
The Canadian Association of Critical Care Nurses (CaACCN, 2004) stated, 'Standards are vital to support nurses in other areas of their professional development such as career development, research, and leadership opportunities'. The Australian College of Critical Care Nursing (ACCCN) (Underwood et al, 1999) and the European Network of Nurses Organisations (2000) previously endorsed these standards. The European Federation of Critical Care Associations (EfCCNa) published their position statement on Post-registration Critical Care Nursing Education within Europe (2004), and also provided guidance to support the development of critical care educational programmes and associated educational standards. Like CCNERF these numerous organisations also recognised the importance of core standards and competencies in ensuring effective delivery of safe patient care by competent critical care nurses.

This document has been produced by CC3N, with contributions by the British Association of Critical Care Nurses (BACCN) and the Royal College of Nursing (RCN: Critical Care and In Flight Nursing Forum). It supports the recommendations made by the WfCCN, EfCCNa and other critical care colleagues; furthermore they identified the importance of specialised programmes of development for critical care nurses, which should be created, delivered and commissioned collaboratively by government, professional and educational bodies and critical care nurse employers.

Critically ill patients have a right to receive safe, high quality care from skilled competent practitioners, however a 'competent practitioner' is not clearly defined. CCNERF defines critical care competence as "the combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective critical care nursing practice and interventions". Across the critical care community it was once generally accepted that a nurse who had completed the ENB 100 programme of learning, was 'competent' to practice as a critical care nurse; however, since the demise of the ENB 100 there is no recognised standard for critical care courses. Nurses are able to attend courses that vary in length, level of competence, number of academic credits and outcome; importantly on completion there is the inability to compare nurses who undertake similar courses across England.

In order to address these issues an educational review forum was formed, which agreed that a definition of competence to operate as a critical care nurse was required and importantly how that level of competence could be acquired.

Critical Care Nurse Education Review Forum (CCNERF)

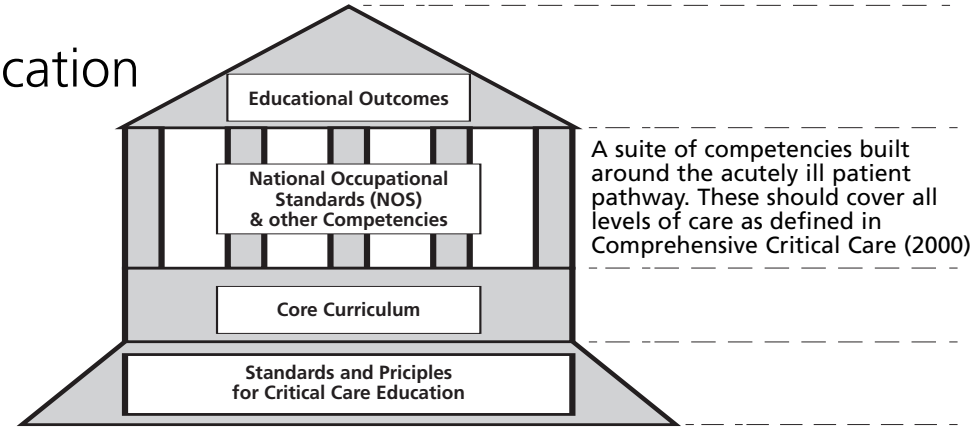
Following a number of discussions between lead nurses at the Critical Care National Network Nurses (CC3N) group a subgroup was established, the Critical Care Nurse Educational Forum (CCNERF) and invitations were extended for appropriately qualified experts and leaders from practice and academia to undertake a review on the extent of the problem, and identify possible solutions for improvement. This subgroup of expert professionals aimed to collaborate with other critical care organisations and professional groups to identify and articulate core educational standards for adult critical care nurses, which would meet the needs of service providers and ensure delivery of safe quality care for the critically ill patient.

The overall purpose of CCNERF was to improve educational outcomes and ultimately quality of care, by identifying and articulating the core educational standards for adult critical care nurses.
It identified the need for national standards related to course delivery and content by which educational programmes for critical care nurses could be measured. It was agreed that the Critical Care Networks had knowledge related to the educational and workforce nursing needs of provider organisations, were aware of the current issues and challenges in developing a nursing cohort fit for practice and were thus, ideally placed to lead this work.

Critical care nurse educational programmes occur at the post registration level and are usually determined by the needs of healthcare employers and the services they provide. Following educational surveys (appendices 1 and 2) CCNERF noted that currently, healthcare trusts and independent sector organisations supply nurses with educational programs either independently or in association with local HEIs. Since these programs vary across the country, it is assumed that staff completing training may not all achieve the same outcomes, which results in inequitable competency and knowledge with the same bands. CCNERF quickly recognised that in addition to the Standards and Principles that would guide course development and delivery, a standardised generic educational curriculum, much like the former ENB 100, would further align national critical care educational standards and core competency; although work was in progress by SfH with CMCCN in developing critical care competencies aligned to NOS, there was still a gap in having a clear curriculum and set of standards by which critical care educational programs should be both commissioned and delivered.

Framework for Critical Care Education

In order to articulate the various activities in progress by different organisations reviewing this topic, CCNERF created a framework that illustrated how its work would complement, and not replicate the work of others.



Educational Outcomes:
- Recommendations from CCNERF
- Determined in partnership between local educational providers and purchaser organisations.

Competencies:
- Skills for Health, NOS (appendix 6).
- Locally developed competencies. Competency to be based on 'proficiency' and aligned to the Knowledge and Skills Framework (KSF).
- HEI's developed competencies. Competency may be assessed up to 'expert' level, but should be aligned to KSF.
- National set of critical care competencies led by CC3N in collaboration with key stakeholders.

Core Curriculum:
- Recommendations by CCNERF on a core curriculum for critical care education, which should inform HEI critical care programme development (appendix 4).

Standards and Principles:
- Recommendations from CCNERF on the development, delivery and management of critical care educational programmes.
- Recommendations from WfCCN, EfCCNa and other global critical care colleagues

National Occupational Standards for Critical Care

CCNERF were asked to consider the suite of NOS devised by the SfH who have identified those that could be applied to demonstrate competence to work efficiently as a critical care nurse at different levels of the SfH career framework (appendix 6). CMCCN have utilised the NOS to create a critical care competency template (appendix 7). The NOS are by no means exhaustive, but provide a sound foundation towards identifying what exactly the critical care practitioner should be able to demonstrate in practice. These could form part of in-house development, orientation and preceptorship programmes or be provided by HEIs as part of their programmes for post-registration critical care education.

It was identified that more work is required to develop a set of national critical care competencies, which would support programmes of education and also reassure critical care leaders and managers in practice, that there is a truly transferrable standard by which critical care nurse have been assessed in practice.

Review of Current Practice

Methodology

As part of the education review it was decided to undertake snapshot surveys looking at the use of competency based standards and current training programs/methods in adult critical care units across England.

The aim of this piece of work was to provide a clear understanding of the current provision of critical care nurse training and education, and to ascertain if the presumed disparities across the country truly existed.

Two surveys were distributed via CC3N using a web based data collection tool. The first survey used questionnaires to ascertain what training programs took place within critical care units across England and the standards and core competency documents used (Appendix 2). The questionnaire was distributed to Lead Nurses from the Critical Care Networks, who in turn distributed it to hospitals known to have critical care units and the questionnaire was completed by Lead Nurses or unit Educators. The second survey distributed to HEIs was an audit of university-based critical care nurse training programs and aimed to review the variety across the country (Appendix 1). Universities with critical care programs were identified through the Networks. Responses were received from 91 critical care units and 23 Higher Education Institutes across England, of those, 4 critical care units and 2 HEIs did not identify the Network in which they resided.

Forum members discussed their in-house critical care nurse training programs, including preceptorship programs, which provided some indication of the variability of in-house critical care training programs throughout England.

Survey Results

Key findings from these surveys demonstrated:

- Variation in critical care programme content
- Variation in programme delivery
- Variation in assessment strategies and assessor criteria
- Inconsistent academic/non-academic level achieved
- Time taken to complete programme varied

More detail of survey results can be found in appendix 3

These results validate CCNERF's original hypothesis that fundamental differences in the quality and type of critical care educational programmes do indeed exist, which can only result in a fragmented knowledgeable critical care nursing workforce and consequently supported the need for the development of standards related to critical care education.

Standards & Principles for Critical Care Education

In order to address the concerns voiced across the critical care community on the educational discrepancies and variable critical care nursing competencies, CCNERF therefore recommends a set of Standards & Principles by which programs of critical care education should be developed, delivered and measured; furthermore it recommends a core curriculum be employed to ensure a minimum standard of educational content is in place within critical care programmes (appendix 4). The creation of these national standards and the recommended core curriculum should not restrain local flexibility or discussions to make courses address local need, but there needs to be clear expectations from all stakeholders of what will be delivered, under what conditions and the outcomes to be achieved. The overall intent is to standardise critical care nurse education and practice that would meet today's modern healthcare needs and satisfy healthcare providers that they have a nursing workforce fit for purpose.

CCNERF believe there are a number of reasons for developing educational standards for critical care nursing.

Continued

• Application of standards will ensure that nursing practice is consistent across the country, impacting positively on recruitment, transferability of the nursing workforce and effective delivery of critical care services.
• Standards can provide a valuable insight for healthcare providers, commissioners and the public on the quality of care to be expected from critical care nursing practitioners
• When implemented effectively they can function as a valuable indicator of quality with identified measurable outcomes.

HEI critical care programmes of education should be reviewed in future to determine whether the 'Standards and Principles' are being applied. The Critical Care Networks, Workforce Directorates or other existing body that consists of critical care nursing experts could undertake this quality assurance mechanism.

It was agreed that it was not within the remit of CCNERF to determine how the HEIs and the critical care units ensure nurses attain both the theoretical knowledge to support competency and the practical skills to perform the competencies; this is best determined through local collaboration between service managers and providers of education.

Future Considerations

The Critical Care Networks in collaboration with other key stakeholders will consider collecting future information on a number of nursing workforce indicators to evaluate the progress of organisations in implementing the 'Standards and Principles' and curriculum recommendations. More importantly CCNERF hopes they will have contributed successfully to elimination of the original issues identified, those being difficulties with critical care nurse recruitment, quality of care delivery and the inability to rely on an overall standard of knowledge, which prevented critical care educational awards being transferable across geographical areas.

The indicators may include the following:
• Student attrition rates
• Percentage of critical care course pass rates
• Number of nurses with an 'award' in critical care practice
• Number of hours of paid educational time
• Nurse turnover in the ICU
• Number of whole time equivalent (WTE) nursing vacancies in critical care
• Staff and patient experience in Critical Care
• Measure of nursing satisfaction of critical care as an effective learning environment

Recommendations

CCNERF presents seven key recommendations to address the issues presented in this document:

Recommendation 1 – Post registration courses for critical care nurses should follow the set of key Standards and Principles. They should be utilised to support other audit or review processes associated with academic standards. In applying these there will be the opportunity for equity in course delivery and outcomes.

Recommendation 2 – The identified core critical care curriculum should form part of all critical care programmes.

Recommendation 3 – A nationally recognised transferrable 'Award in Critical Care Nursing' should be at least a graduate level award at academic Level 6 with a minimum of 60 credits, e.g. 'Graduate Certificate in Critical Care Nursing'.

Recommendation 4 – Nurses may be required to meet future National Occupational Standards and should work towards core critical care clinical competencies as they emerge. These should be developed as a matter of urgency to support the educational standards and critical care curriculum, and will be pivotal for ensuring a nationally transferrable competent workforce. HEI's are advised to refer to the NOS and critical care competencies to support the development of their critical care programmes.

Recommendation 5 – Assessors supporting a nurse on a critical care programme of study need to be a competent critical care nurse and to have completed a programme of study that meets the requirements for mentorship (NMC, 2008). As a minimum, all assessments should be made against the performance criteria in emerging critical care competencies and linked to NOS in order to ensure consistency and to make assessments more objective.

Recommendation 6 – Strategies to monitor the success of changing critical care educational programmes. Workforce knowledge and clinical competency must match the requirements of the service provided.

Recommendation 7 – Commissioners of education are advised to review the Standards and Principles for Critical Care Education and utilise the content to support the development of national quality standards for critical care education.

Conclusion

CCNERF has identified a need to ensure that nurses are trained and educated by programmes of education that have the appropriate specialist skills set that address the needs of the critically ill patient. There is a need to ensure we have a nursing workforce that allows transferability of skills across conurbations, and that clinical leaders and critical care managers have confidence in the quality of those skills for the nurses they are employing. Competent, confident critical care nurses that are effectively prepared both clinically and academically for the demands of the critical care environment can deliver quality safe care. Appropriately qualified educators should deliver programmes that are offered by HEIs, and these programmes should carry a comparable nationally recognised award that is accepted by healthcare provider trusts and independent sector healthcare organisations. This document provides recommendations to address those fundamental differences that exist in the quality of critical care educational programmes.

CCNERF values those individuals and organisations that are willing to collaborate to develop high quality critical care educational programmes, which will impact directly on the quality of care received by critically ill patients. Healthcare managers and clinical leaders need to be assured that the educational programmes they access are fit for purpose and do not compromise the financial constraints that prevail upon the workforce for education and training.

Notably there is still a requirement to develop a fully comprehensive set of nationally recognised competencies for critical care that can be utilised by all. CC3N supports this future work, which will enhance the standards and recommendations made within this document and is committed in its collaborative efforts to improve the quality of critical care services.

Definitions

Award in Critical Care Nursing:
This certificate/qualification is awarded to post registered nurses by universities who have accessed and successfully completed a critical care program. The number of credits obtained for the award should be a minimum of 60 credits at academic level 6.

Academic Study:
Academic study refers to the theoretical component of learning. A lecturer, who is an experienced and knowledgeable educator, instructs students in a classroom setting using tools such as overheads, power point slides, or other multi-media technologies.

Competence:
In keeping with other frameworks related to critical care practice, competence is defined within a professional context as 'the broad ability with which a professional person is able to practice to the required standards in a predetermined range of clinical fields and across a range of situations'. Competences therefore are the elements performed to a pre-determined standard, which combine to create professional competence in a defined role (Stuart 2003).

The NMC booklet Standards for pre-registration nursing education (2010) defines competence as "the combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective nursing practice and interventions".

CCNERF has defined critical care competency as, 'the combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective critical care nursing practice and interventions'.

Competencies:
Competencies are statements describing behaviours that nurses believe are important for providing safe, effective, and ethical care. They reflect the practice expectations described in standards of practice, and the professional attributes required in a given nursing role, situation, or practice setting. Professional attributes include, but are not limited to, knowledge, skill, judgment, values, and beliefs. (College of Nurses of Ontario, 2003)

Critical Care Nurse:
A critical care nurse is a registered practitioner who enhances the delivery of comprehensive patient centred care, for acutely ill patients who require complex interventions in a highly technical environment; bringing to the patient care team a unique combination of knowledge and skills. The roles of critical care nurses are essential to the multidisciplinary team who are needed to provide their expertise when caring for patients and their relatives (WFCCN 2005).

Critical Care:
Critical Care refers to the actual facilities or discrete units within a hospital where adult critical care services are provided. A Critical Care Unit (CCU) is an umbrella term for an HDU or an ICU, or indeed a unit combining both these services (BACCN 2009).

Higher Educational Institute (HEI) a generic term referring to providers of higher education.

In-House Critical Care Nurse Training Program:
This is a program to train post registered nurses to work in the critical care setting, which is designed and taught in the hospital where they will be working. The program is completely hospital specific, therefore, the length of training, both theory and clinical, depends on the training needs and resources of the hospital. Often these are termed 'preceptorship programmes' and may be used to support APeL processes.

Mentorship:
Mentorship occurs during periods of orientation and development and is intended to support individuals perhaps for several months while 'expertise' develops. The objectives of critical care mentorship programs include:
1) Providing education and support to post registered critical care nurses,
2) Fostering pathways to clinical excellence,
3) Educating critical care nurses on evidence-based medicine best practices.

Preceptorship:
This is a period of practical experience and development for post-registered nurses, whose practice is supervised by an expert or specialist in a particular field. Many critical care training programs support preceptorship for part or all of their educational programmes. Perceptorship allows nurses to participate in hands-on critical care training to gain important knowledge and skills through experiences, while still under the safety of supervised care.

Practice Based Learning:
This refers to learning in the clinical setting whereby nurses learn through hands-on experience in the care setting. It includes direct interaction with both critical care nurses and the wider members of the multidisciplinary team. An experienced healthcare professional or clinical educator should provide support for safe practice.

University-Based Critical Care Nurse Programmes:
This is a program of education to enable nurses to work effectively in the critical care setting. They are designed to encompass both theoretical and clinical components for development. Content and programme length may vary and are generally dependent on the local provider. Theoretical study generally takes place in the university setting, with clinical development taking place within the hospital setting.

Glossary

AACCN	American Association of Critical Care Nurses
ACCCN	Australian College of Critical Care Nurses
AP(e)L	Accreditation of Prior & Experiential Learning
BACCN	British Association of Critical Care Nurses
CACCN	Canadian Association of Critical Care Nurses
CC3N	Critical Care Networks – National Nurse leads
CCNERF	Critical Care Nurses Educational Review Forum
CCSF	Critical Care Stakeholder Forum
CMCCN	Cheshire & Mersey Critical Care Network
DOH	Department of Health
EfCCA	European Federation of Critical Care Associations
ENB	English National Board
FHEQ	Framework for Higher Education Qualifications
HEI	Higher Educational Institute
ICS	Intensive Care Society
IHAS	Independent Healthcare Advisory Services
KSF	Knowledge and Skills Framework
NHS	National Health Service
NICE	National Institute of Clinical Excellence
NMC	Nursing and Midwifery Council
NOS	National Occupational Standards
RCN	Royal College of Nursing
SfH	Skills for Health
WFCCN	World Federation of Critical Care Nurses

References

America Association of Critical Care Nurses (2000). Standards for Acute and Critical Care Nursing Practice.

Australian College of Critical Care Nurses (1999) Critical Care Nursing Education Advisory Committee: Position Statement on postgraduate critical care nursing education. Australian Critical Care, vol 12, No 4. p160-164

Audit Commission (1999). Critical to Success. Audit Commission.

Australian College of Critical Care Nurses (1999). Postgraduate Critical Care Nursing Education.
Available at www.acccn.com.au

Australian College of Critical Care Nurses (2003).
Intensive Care Nursing Staffing.

British Association of Critical Care Nurses (2009) Standards for Nurse Staffing in Critical Care.

Canadian Association of Critical Care Nurses (2004). Standards for Critical Care Nursing Practice.

Critical Care Nurse Training Standards Task Group Final Report (2006). Critical Care Secretariat; Ontario.

Department of Health (2000). Comprehensive Critical Care. Department of Health HMSO.

Department of Health (2000). The Nursing Contribution to the Provision of Comprehensive Critical Care for Adults:
A Strategic Program of Action. Department of Health, HMSO.

Department of Health (2004). The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process.
Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843

Department of Health (2008). Modernising Nursing Careers. Department of Health, London

Critical Care Stakeholder Forum (2005) Quality Critical Care - Beyond 'Comprehensive Critical Care'.
Department of Health, London

European Foundation of Critical Care Associations (2004) Post-registration Critical care Nursing Foundation

European Network of Nurses Organisations (2000) Recommendations for a European Framework for specialist
Nursing education, ENNO, Paris, France

Field S. (2011) NHS Future Forum: Summary report on proposed changes to the NHS. DOH, London.
Available at: www.dh.gov.uk/prod_consum_dh/groups/dh.../dh_127540.pdf

Jordan M. and Glennon J. (2010) Critical for Care. A Vision for Post Graduate Critical Care Education and Training in
Cheshire and Mersey: Designed by Professionals for Professionals.
Available at www.skillsforhealth.org.uk

National Institute for Health & Clinical Excellence (2007). The Care of the Acutely Ill. NICE Clinical Guidance 50.
Available at www.nice.org.uk

National Institute for Health & Clinical Excellence (2010). Rehabilitation After Critical Illness. NICE Clinical Guidance 83.
Available at www.nice.org.uk

Nursing and Midwifery Council (2008). Standards to support learning and assessment in practice. NMC, London.
Available at www.nmc-uk.org

The Quality Assurance Agency for Higher Education 2008: The framework for higher education qualifications in England,
Wales and Northern Ireland (FHEQ) can be accessed at:
http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf

Royal College of Nursing (2004) The future nurse: The future of nurse education, a discussion paper.
Available at www.rcn.org.uk/downloads/futurenurse/nurse-education.doc

Scholes J. and Endacott R (2002) Evaluation of the effectiveness of educational preparation for critical care nursing.
Research Highlights: English National Board for Nursing, Midwifery and Health Visiting.

Scholes J (2006) Developing Expertise in Critical Care Nursing. Blackwell Publishing. Oxford.

Stuart, CC (2003) Assessment, Supervision and Support in Clinical Practice, Churchill Livingstone, Edinburgh

The NHS Career Framework. Available at www.skillsforhealth.org.uk/careerframework

World Federation of Critical Care Nurses. (2005).
Declaration of Madrid: Position Statement on the Provision of Critical Care Nursing Education.
Available at www.wfccn.org

APPENDIX 1

Higher Educational Institute (HEI) Critical Care Programme Questionnaire

❶ Is your program offered full-time or part-time? _____

❷ How long is your program (total hrs)? _____

❸ How long does it take to complete the program (receive critical care certification)? _____

❹ On average how many students are in the program (per class/entire program)? _____

❺ What are the prerequisites? _____

❻ What is the cost of the program? _____

❼ How long is the clinical component? _____

❽ How long is the theoretical component? _____

❾ Do you have any other comments? _____

_____

_____

_____

APPENDIX 2

Critical Care Unit Competencies and Standards Questionnaire

❶ Which of the following would best describe the type of critical care unit the questionnaire is being completed for?

☐ Medical ICU ☐ Burns Unit ☐ Surgical ICU ☐ Trauma Unit ☐ Comb. Medical/Surgical ICU

☐ Other (Please specify)

_____

❷ What is the total number of beds in this unit? _____

❸ Which of the following training programs does this unit use to prepare nurses new to critical care for practice in that setting? (Please include the duration in weeks of theoretical and clinical training)

Weeks - Theoretical _____ Clinical _____

☐ College Certification ☐ In-House Orientation

☐ Preceptorship ☐ Other (Please specify)

_____

_____

❹ Do you have written standards of practice for nurses in your unit?

☐ Yes (go to question 5) ☐ No (go to question 8)

Continued on next page

❺ If yes:

a. How often does your unit update these specific standards? _____

b. Which national or local standards are most reflected in your documents? (Check all that apply)

☐ British Association of Critical Care Nurses ☐ Royal College of Nursing

☐ Other: Please specify _____ ☐ None

c. Are your documents inclusive of competency statements?
Examples:
• I set priorities according to the urgency of the patient's presentation.
• I interact effectively with the interdisciplinary team.
• I plan interventions in collaboration with patients, families, and other members of the healthcare team to formulate the overall plan of care.

☐ Yes ☐ No

d. Are your documents inclusive of an evaluation component? ☐ Yes ☐ No (go to question 7)

❻ If yes:

a. How frequently are nurses evaluated? _____

b. Is documentation provided at that time? ☐ Yes ☐ No

c. Is written peer review a required component? ☐ Yes ☐ No

❼ Would you be willing to share your document(s)?

☐ Yes, I have enclosed the document(s)

☐ Yes, I will supply the document(s) on this date: (Please specify) _____

☐ No

❽ We welcome any specific feedback you may have about critical care nursing core competencies and standards. Please share your top three comments or suggestions with us.

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

APPENDIX 3

As part of the education review it was decided to undertake a snapshot survey looking at the use of competency based standards and current training programs/methods in adult critical care units across England. The aim of this piece of work was to provide a clear understanding of the current provision of critical care nurse training and education, and to identify the disparities that exist across the country. The survey used was based on a previous study carried out by the Critical Care Secretariat in Ontario, Canada [1].

Surveys were distributed via the Critical Care Network Lead Nurses using a web based data collection tool. Of the 27 geographical areas associated with clinical networks, a number do not have a formal critical care network structure, as a consequence parts of London and the South West Peninsular are not represented within the results. Responses were received from 91 critical care units and 23 Higher Education Institutes across England, of those 4 critical care units and 2 HEIs did not identify the network in which they resided.

Table 1: Breakdown of Critical Care Unit and HEI responses by Critical Care Networks

Critical Care Network	Critical Care Unit N (%)	HEI N (%)
Avon & Gloucester	4 (4.4)	0 (0.0)
Birmingham & Black Country	3 (3.3)	2 (8.7)
Central England	3 (3.3)	0 (0.0)
Central Southern	5 (5.5)	1 (4.3)
Cheshire & Merseyside	4 (4.4)	2 (8.7)
Essex	2 (2.2)	0 (0.0)
Greater Manchester	5 (5.5)	1 (4.8)
Herefordshire & Bedfordshire	4 (4.4)	1 (4.3)
Kent & Medway	5 (5.5)	0 (0.0)
Lancashire & South Cumbria	5 (5.5)	1 (4.3)
Mid Trent	8 (8.8)	2 (8.7)
Norfolk, Suffolk & Cambridge	6 (6.6)	0 (0.0)
North Central London	0 (0.0)	0 (0.0)
North East Cumbria	4 (4.4)	2 (8.7)
North East London	3 (3.3)	0 (0.0)
North Trent	4 (4.4)	1 (4.3)
North West London	0 (0.0)	0 (0.0)
North West Midlands	2 (2.2)	1 (4.3)
North Yorkshire & Humberside	2 (2.2)	0 (0.0)
South East London	0 (0.0)	2 (8.7)
South West London	1 (1.1)	0 (0.0)
South West Peninsular	0 (0.0)	0 (0.0)
Surrey Wide	3 (3.3)	0 (0.0)
Sussex	5 (5.5)	1 (4.3)
Tees Valley & South Durham	3 (3.3)	0 (0.0)
Thames Valley	3 (3.3)	1 (4.3)
West Yorkshire	3 (3.3)	3 (13.0)

Table 2: General Information - Critical Care Units Demographics

68% of respondents to the survey were categorised as from general critical care units and 73% were combined level 2/3 services. The vast majority of units had 20 beds or less.

Variable		N (%)
ICU Type by Speciality	Burns ICU	1 (1.1)
	Cardiac ICU	4 (4.7)
	General ICU	68 (78.2)
	Medical ICU	1 (1.1)
	Neurosurgical ICU	6 (6.9)
	Surgical ICU	3 (3.5)
	Cardiac & General	2 (2.3)
	Oncology Level 2	1 (1.1)
	All	1 (1.1)
	Missing	4 (4.5)
Unit by Level of Care	3	13 (14.6)
	2	3 (3.4)
	Combined	73 (82.0)
	No response	2 (2.1)
Unit size – bed numbers	≤10	40 (36.4)
	11-15	24 (21.8)
	16-20	18 (16.38)
	> 20	7 (6.37)
	>30	1 (0.9)
	Missing	1 (0.9)

Table 3: Information gathered from Higher Education Institutes

The academic level for the majority of current critical care programmes was reported as degree level (81%), although a number of HEI's delivered their programme at diploma, degree and masters level. Selection criteria to access the critical care programmes was predominantly based on completion of Trust and Independent Sector orientation/preceptorship programmes and students having worked for greater than 12 months in a critical care environment.

Academic Level attained	N (%)	HEI Programme Prerequisite	N (%)
University Certificate	6 (23)	Worked in critical care > I year	12 (52)
Diploma	3 (13.6)	Diploma	7 (30.4)
Degree	18 (81.8)	Degree	2 (8.7)
Masters	4 (18.2)	Completion of Trust orientation programme	8 (34.8)
Other	5 (22.7)	Completion of preceptorship programme	5 (21.7)
		None	0 (0.0)
		Other	6 (26.1)

Table 4: Breakdown of Course Delivery

The information relating to how courses are delivered by HEI's demonstrated there was a general agreement that 50 – 99 hours were aimed at direct contact teaching. In general the spectrum of time allocated to private study was wide and varied and most courses were delivered in a 12 month period or less.

Hours dedicated to direct contact teaching	N (%)	Hours allocated to private study	N (%)	Time taken to complete programme	N (%)
30 - 49	3 (13.0)	≤100	2 (8.6)	< 6 months	8 (34.7)
50 - 99	9 (39.1)	101 - 149	3 (13.0)	6 – 9 months	5 (21.7)
100 - 149	2 (8.6)	150 - 199	3 (13.0)	1 year	7 (30.4)
150 - 199	4 (17.3)	200 - 249	2 (8.6)	> 1 year	1 (4.3)
200 - 249	1 (4.3)	250 - 300	1 (4.3)	Dependent on award	2 (8.6)
> 250	1 (4.3)	> 300	3 (13.0)		
Don't know	3 (13.0)	Not specified	5 (21.7)		
		Don't know	4 (17.3)		

Table 5: Teaching and Assessment Strategies

It's clear from the information gathered that all responding organisations use a blended approach to course delivery.

Teaching strategies utilised	N (%)	Assessment strategies utilised	N (%)	Other assessment strategies identified
Face to face	23 (100)	Written (essays/assignments)	21 (95.5)	Portfolio
Directed study	22 (95.7)	Practical (competency assessment)	20 (90.9)	Reflection
E-learning	17 (73.9)	Other (see column 3)	11 (50.0)	OSCE
Simulation	14 (60.9)			Presentation
Work based learning	16 (69.6)			Case study
Other	4 (17.4)			Exam

Table 6: Student Numbers

Number of students on programme at any one time	N (%)
< 10	2 (10.0)
10 - 30	11 (55.0)
32 - 50	4 (20.0)
51 - 75	2 (10.0)
76 - 100	3 (15.0)
Don't know	1 (5.0)

Table 7: Strategies used to Prepare Staff

Strategies used to prepare staff new to critical care	N (%)
Theoretical	72 (80.0)
Supported clinical practice	86 (95.6)
Accredited HEI critical care course	38 (42.2)
Diploma	8 (8.9)
Degree	14 (15.6)
Masters	8 (8.9)
In-house orientation programme	86 (95.6)
Preceptorship programme	66 (73.3)
Other	8 (8.9)

Table 9: More detailed information from Critical Care Units

100% of units stated they had a written competency based package on their unit. However, responses showed that there was a less cohesive approach to the review process, the professional standards used to underpin competencies and the general mapping to Trust Key Skills Framework.

How often are competencies reviewed	N (%)	Which national or local standards are most reflected in competencies	N (%)	Are competencies linked to Trust Knowledge Skills Framework?	N (%)
1 – 2 years	39 (45.3)	NMC	54 (63.5)	Yes	60 (69.0)
3 – 5 years	36 (41.9)	BACCN	32 (37.6)	No	24 (27.6)
> 5 years	7 (8.4)	RCN	26 (30.6)	Don't know	3 (3.4)
Never	4 (4.7)	Network	45 (52.9)		
		Skills for Health	12 (14.1)		
		None	0 (0.0)		
		Unsure	13 (15.3)		
		Other	15 (17.6)		

Table 10: Defining Competence

There appears to be difficulty in defining competency, although there is clear indication that this is linked to completing a set of clinical competencies.

How do you define competency?	N (%)	What % of your nursing workforce do you consider competent in critical care	N (%)
> 2 year critical care experience	29 (33.0)	< 50%	8 (8.9)
Undertaken academically accredited programme of education	34 (38.6)	50 – 70%	39 (43.3)
Completed a set of clinical competencies	72 (81.8)	70 – 90%	27 (30.0)
Other	12 (13.6)	> 90%	16 (17.8)
		No response	1 (1.1)

Table 11: Competency Assessment

Is assessment of competency undertaken by a trained assessor?			
Yes	87.2 (75)	No	12.8 (11)

Critical Care Units were asked to state the minimum qualifications/experience required to be an assessor. A number of themes evolved when grouping this information:

- Band of staff
- Experience in critical care quantified in years
- Completion of critical care qualification
- Completion of teaching qualification
- Completion of mentors/assessor training

Although emergent themes are evident, the detail provided indicates there is large variation in what is considered to be minimum requirements for assessors.

References

1. Critical Care Nurse Training Standards Task Group Final Report. Critical Care Secretariat; Ontario.

APPENDIX 4

Recommended Core Critical Care Curriculum

In order to work towards the goal of standardising educational provision and outcomes for critical care nurses, CCNERF recommend that providers of education develop programmes around a core curriculum of content. The vision is to ensure a transition from the variety of programme content, to one where provision of the education and training systems for critical care are comparable.
This will allow transferability of the workforce across conurbations and reassure healthcare managers of the standard of critical care nurse education.

CCNERF recognises the importance of having curricula that are designed to prepare students to meet national occupational standards in critical care, which will be the foundation for ensuring transferability of qualifications.

Aims for Educational Centres:

1) Educational programmes should be aligned to achieve service requirements which underpin NHS strategic goals
2) Embrace the concepts of quality and progressive innovation in learning, teaching and assessment
3) Programmes should be developed using a blended learning approach
4) All programmes should disseminate current research and stimulate practice development
5) A non-discriminatory learning environment should be provided for all learners
6) The learning experience should enhance skills and theoretical knowledge
7) All programmes should support and encourage student potential
8) Programmes should be developed and delivered by a combination of individuals who are academically and clinically credible

Critical Care Learning Outcomes:

Programme learning outcomes should allow for the integration of various learning experiences, both within the academic and clinical setting. The resulting critical care award/qualification should develop graduates with high-level analytical skills and a specific range of competences related to the critical care environment. These are further defined in the 3 areas below, but CCNERF recognises that each HEI may have differing programme outcome 'headlines', hence these sections are not mandatory but the related content should be incorporated as part of all course outcomes.

1) Knowledge and Skill

Demonstrate and critically reflect on the application of critical care nursing skills which are theoretically underpinned.

2) Research

Critically evaluate evidence based practice in context to critical care practice.

3) Decision Making

Critically appraise and apply relevant theory to support clinical decision making within a critical care team setting.

The Programme of study should prepare learners to demonstrate:

- Knowledge of relevant anatomy and physiology
- Ability to recognise health abnormalities
- Competence to assess, plan, implement and evaluate care for patients with health abnormalities
- Knowledge relating to pharmacology and pharmacokinetics
- Knowledge of investigations and application of results
- Knowledge of treatment modalities
- Safe and effective use of equipment
- Competence to manage related emergency situations
- Ability to demonstrate leadership, management and team skills

All of the above elements should be applied to the following 6 systems and content related to an appropriate evidence base:

1. Respiratory system **2.** Cardiovascular system **3.** Renal System
4. Gastrointestinal System (inclusive of liver and bilary systems) **5.** Neurological System **6.** Integumentary System

Supporting Areas for Development

There are other key areas of development that are integral within the critical care nursing curriculum namely Communication and teamwork, Law and Ethics and Holistic care. Although nurses may have had exposure to these subjects these should be addressed with specific reference to the critical care environment.

Communication and Teamwork. The student will demonstrate:

- Knowledge of the importance of team working
- Participation in effective team working
- The need for clear and accurate documentation
- Effective communication techniques and identify barriers to communication

Law and Ethics. The student will demonstrate:

- The legal responsibility of their role • Knowledge of ethical principles
- Knowledge of Acts of Parliament that influence care delivery • Principles of consent and mental capacity
- Knowledge of withdrawal of treatment, end of life care, DNAR and advanced directives
- Awareness of the need for defensible documentation • Knowledge of professional responsibilities
- Knowledge of ethical dilemmas

Holistic care: The student will demonstrate:

- The ability to manage the critically ill patient along the patient pathway
- Psychosocial care of the patient and their family • The ability to provide essential physical care
- The ability to maintain privacy and dignity • The ability to manage End of Life, bereavement and sudden loss
- The ability to recognise and instigate opportunities for rehabilitation

NB. CCNERF makes special mention that leadership, management & team skills should be recognised as core areas of development to enable effective practice with the critical care setting, and these should be applied to each of the systems studied.

EXAMPLE OF CURRICULUM CONTENT:

To prepare learners to meet the requirements identified in the elements of learning in relation to the Respiratory System, the programme of study should include:

The Respiratory System	
Key areas	**Suggested topics for study**
Anatomy and physiology	Anatomy and Physiology of the respiratory system
Respiratory abnormalities including:	• Hypoxia • Type 1 & 2 respiratory failure • Sputum retention • Asthma • Pulmonary embolism • Pleural effusion • Atelectesis • Chest trauma • ARDS • Pneumothorax/ Haemothorax • Pneumonia • COPD • Neurological disorders • Sepsis • Respiratory arrest
Assessment of respiratory function	• Rate • Rhythm • Depth • Chest expansion • Use of accessory muscles • Oxygen saturations • Chest auscultation • Colour/perfusion • Conscious level

The Respiratory System	
Key areas	**Suggested topics for study**
	• Arterial blood gas • Sputum • Mechanical ventilation observations
Pharmacology & pharmacokinetics:	• Oxygen therapy • Bronchodilators • Inhalational agents • Steroids • Antibacterials, anti-fungals & anti-virals • Analgesia & muscle relaxants • Diuretics • Sedative agents & anti-convulsants • Induction agents • Cardiovascular • Anti-coagulants • Electrolytes, colloids & crystalloids • Others e.g. insulin
Investigations & application of results	• ABG's • Chest X-ray • Peak flow • Sputum culture & sensitivity • Blood cultures • Bronchial lavage
Treatment modalities	• Airway adjuncts • Manual hyperinflation • Intubation & extubation • Tracheostomy • Oxygen therapy • Non Invasive ventilation • Invasive ventilation • Physiotherapy treatments • Suction

Continued on next page

The Respiratory System	
Key areas	**Suggested topics for study**
	• Humidification • Chest drain management • ECMO • Nitric Oxide therapy • High frequency oscillation • Complications of treatment
Safe & effective use of equipment related to subject • Knowledge of infection prevention and control • Safe transfer and retrieval of patients • Risk assessment and risk management strategies • Knowledge of health & safety and security	• Pulse oximetry • Ventilators (invasive & non-invasive) • Oxygen therapy devices • Endotracheal / tracheostomy tubes • Stethoscopes • Capnography • Suction equipment • Humidification equipment • Monitoring systems • Waters circuit/bag valve mask • Infusion devices • Syringe drivers • Nebulisers • Arterial lines • ABG analysers • Chest drain insertion / equipment • Cuff pressure manometer • Bronchoscopy equipment

The Respiratory System	
Key areas	**Suggested topics for study**
Associated Emergency situations	• Respiratory arrest • Drug error • Unplanned extubation • Dislodged tracheostomy • Difficult airway • Blocked tracheostomy • Haemorrhage • Tension pneumothorax • Anaphylaxis • Equipment failure • Electricity failure • Medical gas failure
NB. CCNERF makes special mention that leadership, management and team skills should be recognised as core areas of development to enable effective practice with the critical care setting, and these should be applied to each of the systems studied.	

NB. This is an example only and the list is by no means exhaustive.

APPENDIX 5

Summary of Attributes and Definitions for Career Framework Levels

Skills for Health

Better Skills
Better Jobs
Better Health

These summaries have been distilled from the Career Framework Descriptors used in the process of levelling jobs onto the Career Framework since 2006.

They are used when describing Nationally Transferable Roles, and describe the level of autonomy and responsibility and the kind of decision making required by a job. They provide additional, essential information about a job, alongside National Occupational Standards. The definitions of the more specific job titles have been informed by publications and work from the Department of Health and Professional bodies.

Each summary is applicable to all jobs across the health sector at a given level including clinical, administration, management etc. The examples may be applied to both clinical and non clinical roles.

CAREER FRAMEWORK LEVEL 8

People at level 8 of the career framework require highly specialised knowledge, some of which is at the forefront of knowledge in a field of work, which they use as the basis for original thinking and/or research.

They are leaders with considerable responsibility, and the ability to research and analyse complex processes. They have responsibility for service improvement or development. They may have considerable management responsibilities and be accountable for service delivery or have a leading education or commissioning role.

For example: Consultant Practitioner, Career Framework Level 8

The consultant practitioner is an expert practitioner with a high level of responsibility for the development and delivery of services. There is a strong element of research within the role. They will carry out research, and may have overall responsibility for the coordination of R&D programmes as well as ensuring that current research findings are used by all staff to inform their practice. The consultant practitioners will lead by example in developing highly innovative solutions to problems based on original research and inquiry.

They will apply a highly developed theoretical and practical knowledge over a wide range of clinical, scientific, technical and /or management functions.

CAREER FRAMEWORK LEVEL 7

People at level 7 of the career framework have a critical awareness of knowledge issues in the field and at the interface between different fields.

They are innovative, and have a responsibility for developing and changing practice and/or services in a complex and unpredictable environment.

For example: Advanced Practitioner, Career Framework Level 7

Advanced practitioners are experienced professionals who have developed their skills and theoretical knowledge to a very high standard, performing a highly complex role and continuously developing their practice within a defined field and/or having management responsibilities for a section/small department. They will have their own caseload or work area responsibilities.

CAREER FRAMEWORK LEVEL 6

People at level 6 require a critical understanding of detailed theoretical and practical knowledge, are specialist and /or have management and leadership responsibilities. They demonstrate initiative and are creative in finding solutions to problems. They have some responsibility for team performance and service development and they consistently undertake self development.

For example: Specialist or Senior Practitioner, Career Framework Level 6

Specialist practitioners have developed a high level of knowledge and skill in a specific area of practice. They have a depth of knowledge and understanding which enables them to perform at a high level of practice, take a leadership role, use and develop evidence to inform their practice, and deal with complex, unpredictable environments. They will have their own caseload or work area responsibilities.

CAREER FRAMEWORK LEVEL 5

People at level 5 will have a comprehensive, specialised, factual and theoretical knowledge within a field of work and an awareness of the boundaries of that knowledge.

They are able to use knowledge to solve problems creatively, make judgements which require analysis and interpretation, and actively contribute to service and self development. They may have responsibility for supervision of staff or training.

For example: Practitioner

Practitioners have a broad knowledge base in a particular field of practice which enables them to work with a considerable degree of autonomy.

Continued on next page

They may have line management responsibilities but will not be responsible for service delivery. They underpin their practice. A practitioner is competent in their area of practice and will seek opportunities to improve the service they offer.

CAREER FRAMEWORK LEVEL 4

People at level 4 require factual and theoretical knowledge in broad contexts within a field of work.

Work is guided by standard operating procedures, protocols or systems of work, but the worker makes judgements, plans activities, contributes to service development and demonstrates self development. They may have responsibility for supervision of some staff.

For example: Assistant/Associate Practitioner

Assistant practitioners have a required level of knowledge and skill enabling them to undertake tasks that may otherwise have been undertaken by a practitioner. They will have developed specific technical skills and have a high degree of technical proficiency. They will exercise a degree of autonomy and undertake well defined tasks requiring limited judgement. They may have line management responsibility for others.

CAREER FRAMEWORK LEVEL 3

People at level 3 require knowledge of facts, principles, processes and general concepts in a field of work.

They may carry out a wider range of duties than the person working at level 2, and will have more responsibility, with guidance and supervision available when needed. They will contribute to service development, and are responsible for self development.

For example: Senior Healthcare Assistants/Technicians

Senior healthcare assistants or technicians support the work of practitioners at all levels and may work as part of a team. They demonstrate an ability to carry out tasks, solving straightforward problems and making some judgements, with guidance and supervision available. They have skills in specific focussed aspects of service delivery.

CAREER FRAMEWORK LEVEL 2

People at level 2 require basic factual knowledge of a field of work.

They may carry out clinical, technical, scientific or administrative duties according to established protocols or procedures, or systems of work.

For example: Support Worker

Support workers work to agreed protocols and procedures. They are able to solve routine problems and make straightforward judgements. They have general skills across a range of aspects of service delivery and work under close supervision.

APPENDIX 6

National Occupational Standards (Competences)

Skills for Health
Better Skills
Better Jobs
Better Health

Skills for Health and National Occupational Standards

Skills for Health has lead responsibility for developing National Occupational Standards (NOS) for the health sector. NOS, more commonly known as competences, are relevant to the whole of the UK and apply to the healthcare sector in its entirety, rather than exclusively to the NHS. All Skills for Health competences are UK Commission for Employment and Skills (UKCES) approved National Occupational Standards.

Skills for Health works collaboratively with the relevant stakeholders, practitioners and experts to write NOS, which describe performance as outcomes of a person's work and set out the required knowledge and understanding required to underpin that performance. NOS are developed to meet rigorous internal quality systems and the NOS Quality Criteria set down by the UKCES. Once the internal quality assurance requirements and the NOS Quality Criteria have been met, the draft NOS are submitted to UKCES who are responsible for approving all Sector Skills Councils' National Occupational Standards.

Once approved they become National Occupational Standards (NOS), and are used across the four countries; England, Northern Ireland, Scotland and Wales.

NOS focus on what the person needs to be able to do, relating to individual performance, as well as what they must know and understand to work effectively. They can be grouped together into frameworks, for example, they can be specifically relevant to a particular condition, or can be grouped in other ways, such as qualification or role.

The template used by Skills for Health for presenting NOS has evolved over the years and is reviewed and updated based on continuing evaluation. NOS have a review date and are reviewed by Skills for Health on a project basis.

NOS could be reviewed because:

- ► Feedback has been received that a competence no longer reflects current practice.
- ► Where the competence is identified as being part of the 'scope' of a new project the National Reference Group may decide that the National Occupational Standards (NOS) needs to be updated.

Use of National Occupational Standards

National Occupational Standards are designed to allow people to assess and be assessed against them. In order to do that, they must be:

► a single task ► able to be undertaken by one individual ► measurable ► observable.

NOS define what has to be done, not who does it.

They describe:

- ► what the required standard is for a particular activity
- ► the performance criteria against which competence can be assessed
- ► the underpinning knowledge that is needed.
- ► Each NOS is currently written in a set format which includes:
- ► Title - active tense with a range of context/conditions ► Scope/overview - further defines range
- ► Performance criteria - measures of successful performance (the minimum standard required)
- ► Knowledge and understanding required to underpin the performance criteria

National Occupational Standards (NOS) are a tool to help individuals, organisations and training providers to improve performance. The use of NOS related to the requirements of the care pathways and the service user when designing education and training ensures education provision is relevant to employer and workforce needs.

NOS can be used to:

- ► Inform the development of national qualifications
- ► Design tailored training packages and assess relevance and effectiveness
- ► Define learning outcomes and assessment criteria ► Provide clear goals for structured learning.

In addition, evidence used to demonstrate competence against a National Occupational Standard (NOS) can also be used to demonstrate how an individual meets their NHS KSF profile. Each NOS has a code for identification, e.g. Gen 97, the full text of each NOS can be found at www.skillsforhealth.org.uk

APPENDIX 7

Example of a Critical Care Competency

The competency below has been mapped against NOS CHS78

Performance Statement Provides Oxygen Therapy
National Occupational Standard CHS78
This standard is about the safe and effective administration of oxygen in the critical care environment

Knowledge and Understanding	**Y**	**N**
Can demonstrate responsibilities and accountability under the current national legislation and local policies, protocols and guidelines with respect to the administration of oxygen		
Can demonstrate the effect of oxygen on individuals' physiological status		
Can demonstrate the methods to assess and monitor the individual during the administration of oxygen • Level and frequency of observation CHS 39		
Can demonstrate the importance of working within your own sphere of competence and seeking advice when faced with situations outside of your competence		
Can demonstrate the potential adverse effects of oxygen therapy and how they can be prevented and/or minimised		
Can demonstrate the national/local guidelines for risk management and recording of adverse incidents		
Can demonstrate the contraindications to administering oxygen		
Can demonstrate the equipment and accessories to be used in oxygen administration in the: • Self ventilating patient • Patient receiving CPAP/Non-invasive ventilation • Patient on mechanical ventilation		
Can demonstrate the correct procedure for the reporting of faulty equipment		
Can demonstrate methods of obtaining valid consent and how to confirm that sufficient information has been provided on which to base this judgment in the: • Level 2 patient • Level 3 patient		

Performance Criteria	**Y**	**N**
Ensure that you adhere to the health and safety and COSHH measures relevant to the administration of oxygen to prevent or minimise the potential adverse effects of oxygen therapy		
Can identify the difficulties in the prescription of oxygen in critical care and can outline the local guidance in place to ensure national requirements are met		
Can outline the normal physiological process for gas exchange		
Can outline the physiological complications associated with reduced gas exchange • Inadequate oxygenation • Hypercapnea		
Can outline the signs and symptoms of oxygen toxicity		
Can outline clinical situations where oxygen should be administered with caution		
Self Ventilating		
Can assemble and identify the necessary equipment: • Nasal cannula • Simple face mask • Non-rebreath mask • Venturi mask • Tracheotomy mask • T-piece • Humidification systems		

Can perform checks to confirm that all the equipment is working correctly in accordance with the manufacturer's instructions and can report any faults immediately according to procedure, ensuring oxygen therapy in not interrupted		
Can instigate oxygen therapy to the self ventilating patient safely		
Can adequately monitor the self-ventilating patient during oxygen delivery. CHS 39		
Can titrate oxygen therapy to meet the treatment goals set for the self ventilating patient		
Can use problem solving skills to trouble shoot equipment if a problem arises with the self ventilating patient		
Can escalate care and management of the self ventilating patient receiving oxygen therapy in accordance with local guidelines		
Can safely discontinue oxygen therapy to the self ventilating patient, giving rational for discontinuation		
Can establish an observation and care plan for the self ventilating patient recently discontinued from oxygen therapy		
Documents all aspects of observations and care in line with national and local guidance		
Cpap/Non-invasive ventilation		
Can assemble and identify the necessary equipment • Facial/nasal mask • Hood • T-piece • Cpap machine • Peep valve • Non-invasive ventilator • Passy Muir valve • Humidification systems		
Can perform checks to confirm that all the equipment is working correctly in accordance with the manufacturer's instructions and can report any faults immediately according to procedure, ensuring oxygen therapy and treatment cycles are not interrupted		
Can instigate oxygen therapy to the patient receiving Cpap/Non-invasive ventilation safely		
Can titrate oxygen therapy to meet the treatment goals set for the patient on Cpap/Non-invasive ventilation		
Can discuss the rational for: • Peep • High flow oxygen		
Can demonstrate the correct use of flow rate to achieve effect oxygen delivery during Cpap therapy		
Can monitor the patient receiving Cpap/Non-invasive ventilation during oxygen delivery CHS 39		
Can use problem solving skills to trouble shoot equipment if a problem arises with the patient on Cpap/Non-invasive ventilation		
Can escalate care and management of the patient receiving oxygen therapy on Cpap/Non-invasive ventilation in accordance with local guidelines		
Can safely discontinue Cpap/Non-invasive ventilation, giving rational for discontinuation		
Can establish an observation and care plan for patient recently discontinued from Cpap/Non-invasive ventilation • Include supplementary oxygen therapy to the self ventilating patient		
Documents all aspects of observations and care in line with national and local guidance		
Mechanical ventilation		
Can assemble and identify the necessary equipment • Artificial airway • Catheter mount • Closed suction • Ventilation tubing • Ventilator • Humidification systems		
Can perform checks to confirm that all the equipment is working correctly in accordance with the manufacturer's instructions and can report any faults immediately according to procedure, ensuring oxygen therapy and treatment cycles are not interrupted		

Can instigate oxygen therapy to the patient established on mechanical ventilation safely		
Can titrate oxygen therapy to meet the treatment goals set for the patient on mechanical ventilation		
Can use problem solving skills to trouble shoot equipment if a problem arises with the patient on mechanical ventilation		
Can monitor the patient on mechanical ventilation during oxygen delivery CHS 39		
Can escalate care and management of the mechanically ventilated patient receiving oxygen therapy in accordance with local guidelines		
Can safely wean and discontinue oxygen therapy via a ventilator, giving rational for discontinuation		
Can establish an observation and care plan for patient recently discontinued from mechanical ventilation • Weaning to Cpap/Non-invasive ventilation • Extubation • Include supplementary oxygen therapy to the self ventilating patient		
Documents all aspects of observations and care in line with national and local guidance		
Humidification		
Can identify the indications/rationale for humidification		
Can discuss the potential complications of artificial humidification and the methods used to minimise these risks: • Describe normal physiological mechanisms for humidification • Identify rational for artificial humidification and outline the risks to the critical care patient in the absence of normal function • Identify probable causes of chest infection and the possible effects this will have on the critical care patients recovery and outcome		
Can choose the appropriate humidification system for the following patient groups: • Self ventilating patient • Patient receiving Cpap or non-invasive ventilation • Patient receiving mechanical ventilation		
Can assemble humidification equipment correctly and perform safety checks in line with manufacture's and local policy: • HME filters • Cold water nebulizers • Water systems • Heated water systems		
Can set humidification correctly • Flow of gas • Temperature		
Can trouble shoot humidification equipment and take appropriate action if difficulties arise		
Can adjust humidification to maintain adequate/target respiratory function		
Can safely discontinue and dispose of humidification in accordance with local policy		
Emergency Situations		
Can locate, set up and check appropriate emergency ventilation equipment • Airway adjuncts • Mask • Ambu/rebreath bag		
Can maintain airway and ventilation using emergency equipment		
Can outline the national and local guidance on airway management		

Assessment Methods Completed **Observation Y/N Probing Questioning Y/N Simulation Y/N Portfolio Y/N**
Performance Achieved
Date
Signatures: **Assessor: Learner:**

Members of the Critical Care National Education Review Forum

The contributions and ongoing support of the following individuals and organisations throughout the development of this document are sincerely acknowledged.

Andrea Baldwin	Lancs and South Cumbria Critical Care Network
Andrea Berry	Greater Manchester Critical Care Network
Lorraine Burgess	ICS Representative / John Moore's University Liverpool
Margaret Clark	West Yorkshire Critical Care Network
Sarah Clarke	Cheshire & Mersey Critical Care Network
Deborah Cheetham	North East Critical Care Network
Lee Cutler	North Trent Critical Care Network
John Dean	Wessex Critical Care Network
Lesley Durham	NOrF representative & North of England Critical Care Network
Alison Eddleston	University of Central Lancashire
Alison East	Herts & Bedfordshire Critical Care Network
Ifor Evans	Wales Critical Care Network
Pauline Freeman	University of Hertfordshire
Helen Friend	Herts & Beds Critical Care Network
Jane Glennon	Skills for Health
Lene Gurney	IHAS Representative
Angela Himsworth	Central England, Birmingham and Black Country, and NW Midlands Critical Care Networks
Mary Jordan	Cheshire & Mersey Critical Care Network
Sheila Kinoulty	Critical Care Networks of Northern Ireland
Colette Laws-Chapman	BACCN Representative
Jacqueline Lowe-Berry	University of Central Lancashire
Lorraine Marsons	Birmingham City University
Gerri Nevin	RCN Representative
Deborah Slade	Thames Valley Critical Care Network
Keith Young	Department of Health Representative

OTHER CONTRIBUTORS

Juliet Anderson	BACCN
Rachel Binks	RCN Critical Care Inflight Forum

This document has been produced with support from these organisations and is available through their websites.

www.baccn.org.uk

www.ics.ac.uk

www.independenthealthcare.org.uk

www.rcn.org.uk