Scope and Delivery of Evidence-Based Care

CHAPTER 1

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AIMS AND CHAPTER OVERVIEW

About 200,000 people per year in the UK require critical care for many different reasons, ranging from acute medical emergencies, to major trauma incidents such as serious road accidents (Batchelor, 2021). People who develop a critical illness and their families deserve the best treatment and care that can be provided, to optimise their health outcomes, experiences and quality of life. Excellence, however, requires appropriate interventions with a strong evidence base and practitioners[1] who are competent to deliver treatment and care. The aim of *Critical Care Manual of Clinical Nursing Procedures, 2nd edition* is to detail the latest research and rationale for evidence-based procedures and competencies related to the provision of adult critical care. As such, the manual is ideally placed to be used as a reference and resource for advancing critical care practice and education for nurses and the wider multi-professional team. This chapter describes how critical illness needs are classified, provides an overview of key national policies and discusses the role of the manual in the introduction of evidence-based practice. Whilst mainly focused on the context of critical care nursing within the United Kingdom (UK), the content is relevant to critical care practitioners worldwide.

BACKGROUND AND CLASSIFICATION OF CRITICAL ILLNESS AND CRITICAL CARE IN THE UK

Critical care is defined as a 'multi-professional, multidisciplinary service which must deliver an integrated care pathway focused on patient need whilst addressing quality, governance and supporting optimal outcomes for patients' (NHSE, 2022).

'Critical care' is an umbrella term encompassing both intensive and high dependency care for adults. Critical care provision has developed considerably over many years. A defining moment was publication of the Department of Health policy document entitled 'Comprehensive Critical Care' (Department of Health, 2000). This strategy document led to a restructure of the organisation of critical care services by advocating that provision of care should extend beyond the walls of an intensive care unit (ICU). It set out the vision for how critical care should be delivered, replacing the division of intensive care and high dependency beds with a classification system focused on levels of care. Whilst the original classification has since been updated (Table 1.1), the principle remains.

As in the original publication by the Department of Health (2000) and the 2009 Levels of Care document published by the Intensive Care Society (ICS), the 2021 Levels of Adult Critical Care (ICS, 2021) describes the care a patient requires, based on need. It merges the original level 0 and level 1 categories into one for people requiring ward level care, enabling 'level 1' to represent the need for Enhanced Care, and levels 2 and 3 the need for critical care. Levels 2 and 3 have also been amended to reflect contemporary needs of critically unwell people.

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[1] In this text the term 'practitioner' is used to refer to all staff who deliver care. This includes, for example, doctors, therapists, dieticians and nurses. It also extends to nursing associates and healthcare assistants involved in delivery of care.

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Table 1.1 Levels of adult critical care (Intensive Care Society (ICS), 2021 / with permission from Intensive Care Society)

Classification	Definition
Ward Care	• Patients whose needs can be met through normal ward care in an acute hospital. • Patients who have recently been relocated from a higher level of care, but whose needs can be met on an acute ward with additional advice and support from the critical care outreach team. • Patients who can be managed on a ward but remain at risk of clinical deterioration.
Level 1 Enhanced Care	• Patients requiring more detailed observations or interventions, including basic support for a single organ system and those 'stepping down' from higher levels of care. • Patients requiring interventions to prevent further deterioration or rehabilitation needs which cannot be met on a normal ward. • Patients who require on going interventions (other than routine follow up) from critical care outreach teams to intervene in deterioration or to support escalation of care. • Patients needing a greater degree of observation and monitoring that cannot be safely provided on a ward, judged on the basis of clinical circumstances and ward resources. • Patients who would benefit from Enhanced Perioperative Care.
Level 2 Critical Care	• Patients requiring increased levels of observations or interventions (beyond level 1), including basic support for two or more organ systems and those 'stepping down' from higher levels of care. • Patients requiring interventions to prevent further deterioration or rehabilitation needs, beyond that of level 1. • Patients needing two or more basic organ system monitoring and support. • Patients needing one organ system monitored and supported at an advanced level (other than advanced respiratory support). • Patients needing long-term advanced respiratory support. • Patients who require Level 1 care for organ support but who require enhanced nursing for other reasons, in particular maintaining their safety if severely agitated. • Patients needing extended postoperative care, outside that which can be provided in enhanced care units: extended postoperative observation is required either because of the nature of the procedure and/or the patient's condition and co-morbidities. • Patients with major uncorrected physiological abnormalities, whose care needs cannot be met elsewhere. • Patients requiring nursing and therapies input more frequently than available in level 1 areas.
Level 3 Critical Care	• Patients needing advanced respiratory monitoring and support alone. • Patients requiring monitoring and support for two or more organ systems at an advanced level. • Patients with chronic impairment of one or more organ systems sufficient to restrict daily activities (co-morbidity) and who require support for an acute reversible failure of another organ system. • Patients who experience delirium and agitation in addition to requiring level 2 care. • Complex patients requiring support for multiple organ failures, this may not necessarily include advanced respiratory support

The organisation of care for different categories of need varies according to patient requirements and how this is accommodated by the local service. Adults with level 3 needs are generally cared for in a clinical area that is designated primarily for this category of patient and is often referred to as an intensive care unit (ICU). This is because this group need high levels of monitoring, intervention and organ support, which requires specialist expertise and equipment. Sometimes the level 3 care facility is also a 'specialty only' unit (such as patients with neurological problems or burns).

Patients defined as requiring level 2 or level 1 support are cared for in a wider variety of settings, with an increase in the number of enhanced care beds currently being developed. Settings include designated units (which may or may not include specialist-only beds); specific area/beds within a level 3 facility (which may or may not include specialist-only beds); and specific area/beds within a ward level care facility (which may or may not include specialist-only beds). Patients cared for in a ward-based facility are often there on a temporary basis with the support of the multidisciplinary critical care outreach team.

While the levels of critical care are clearly defined, allowing for a joint understanding of the needs of patients and the required level of care, a variety of designations and terms have been used to describe critical care facilities; these include intensive therapy (or care) unit (ITU or ICU), critical care unit (CCU), high dependency unit (HDU), special care unit (SCU) and post-anaesthetic care unit (PACU). It is important, therefore, that the patient's needs and the care facility are clearly and accurately identified and that all involved in service planning and provision and delivery of care have a shared understanding to effectively and efficiently meet the patient's requirements. For the purposes of this manual the term 'critical care' refers to patients requiring care at levels 2–3, whereas 'enhanced care' refers to patients requiring level 1 care.

As well as the varying levels of critical care required and the locations where this care can be delivered, the characteristics of the patient population are important in determining the level of care required.

The varying patient characteristics and the complexity of caring for the critically ill requires teams of multidisciplinary specialist critical care practitioners to deliver the care, including: doctors, nurses, advanced critical care practitioners, physiotherapists, dieticians and psychologists, alongside registered and unregistered support staff engaged in patient care. Although at times specific individuals within the team are involved in particular aspects of care, the overall delivery of critical care is highly reliant on teamwork.

OVERSIGHT AND GUIDANCE FOR ADULT CRITICAL CARE PROVISION

Each of the four countries in the UK has its own national health service, which governs the provision of critical care service delivery. For example, the NHS in England (NHSE) Adult Critical Care Planning Programme supports critical care to restore and strengthen services, providing tools and guidance for commissioners, networks and providers to plan and deliver services across their footprints.

In England, the Adult Critical Care Clinical Reference Group (CRG) is responsible for developing service specifications, which clearly define the standards of care expected from organisations funded by NHS England to provide specialised care. The most recent service specification for adult critical care was published in 2022: www.england.nhs.uk/publication/adult-critical-care-services/. Similar structures exist in the other thee UK nations.

ADULT CRITICAL CARE NETWORKS

Adult critical care in the UK is organised into geographical networks, called adult critical care networks. These networks support hospitals providing adult critical care services through sharing knowledge, expertise and practical support across different units. The role of the networks is to support the monitoring and consistency of service delivery as outlined in the service specification (NHSE, 2023b). There are 20 critical care networks across England, Northern Ireland & Wales, which can be viewed here: https://www.cc3n.org.uk/uploads/9/8/4/2/98425184/directory_of_cc_networks_-_october_2018.pdf.

There are no formal adult critical care networks in Scotland.

There are several other key critical care organisations:

- **The Intensive Care National Audit and Research Centre (ICNARC):** ICNARC collates activity data from all critical care units in England, Wales and Northern Ireland. ICNARC manages four national clinical audits – the Case Mix Programme (CMP) and Irish National Intensive Care Unit Audit (INICUA) which address adult critical care, the Assessment of Risk in Cardiothoracic Intensive Care (ARCtIC) which addresses adult cardiothoracic critical care, and the National Cardiac Arrest Audit (NCAA) which addresses in-hospital cardiac arrest. ICNARC also manages a broad portfolio of research, both experimental (randomised clinical trials) and observational, applying quantitative and qualitative methods – within its UK Clinical Research Collaboration registered Clinical Trials Unit. For further information please see: www.icnarc.org/.
- **Intensive Care Society (ICS):** The ICS is the largest multi-professional intensive care membership organisation in the UK, dedicated to supporting it's members from all professions in critical care. Further details can be found here: https://ics.ac.uk/.
- **Faculty of Intensive Care Medicine (FICM):** The FICM is the professional and statutory body for the specialty of intensive care medicine, the doctors who lead critical care services, Advanced Critical Care Practitioners and Critical Care Pharmacists: www.ficm.ac.uk/.

- **Critical Care Leadership Forum (CCLF):** CCLF was established in 2013 as one of the main recommendations emerging from the Collaborating for Quality in Intensive Care publication (Temple et al., 2013). The primary role of the CCLF is to promote UK-wide high-quality care for patients with, or at risk of, critical illness through integrating the energies and skills of its participating organisations. The forum aims to act as a single point of high-quality specialist advice for national policy initiatives, commissioning, research, audit, education, professional standards and clinical practice: www.ficm.ac.uk/aboutusaboutthefaculty/critical-care-leadership-forum.
- **The United Kingdom Critical Care Nursing Alliance (UKCCNA):** Established in 2013, UKCCNA is an alliance of all recognised critical care nursing organisations across the UK. The UKCCNA provides a platform to identify, discuss and address issues of common concern, avoiding unnecessary duplication of projects and gaining a clear collaborative consensus. The UKCCNA is part of the multi-professional CCLF. It endeavours to engage with all relevant stakeholders, be a strong leadership body and advocate for critical care nursing, so that their voices are heard at all times. The UKCCNA has published several position statements, which can be viewed at: www.ficm.ac.uk/UKCCNA.The member organisations of the UKCCNA are:
    - **Royal College of Nursing (RCN) (Critical Care and Flight Nursing Forum):** This forum provides a community for RCN members working in any flight nursing or medical assistance setting: www.rcn.org.uk/Get-Involved/Forums/Critical-Care-and-Flight-Nursing-Forum.
    - **British Association of Critical Care Nurses (BACCN):** BACCN is a leading non-profit organisation dedicated to the promotion of nursing in critical care. BACCN provide a UK voice to shape the strategy for critical care nursing, promote safe, quality evidence-based nursing care to the critically ill patient and provide wide-ranging benefits and opportunities to its members: www.baccn.org/about/.
    - **Critical Care National Network Nurse Lead Forum (CC3N):** The Critical Care National Network Nurse Leads Forum (CC3N) was established in 2003 as part of the NHS Modernisation programme. They are one of three forums that represent the Critical Care Networks, alongside the Network Medical Leads and the Network Directors/Managers: www.cc3n.org.uk/.
    - **The National Outreach Forum (NOrF):** NOrF was founded in 2004 by professionals involved with the first Critical Care Outreach Teams in UK. Since then, it has evolved into a multi-professional interest group that seeks to promote excellence in the care of acutely unwell and deteriorating patients: www.norf.org.uk/.
    - **Intensive Care Society (Nursing Professional Advisory Group-NPAG):** The NPAG helps shape UK practice and acts as the mechanism through which the views and expertise of the nursing profession are represented at ICS Council: https://ics.ac.uk/membership/pags.html.
    - **Paediatric Critical Care Society (PCCS):** PCCS is a professional, multidisciplinary membership organisation representing the interests of those delivering paediatric critical care in the UK. The nursing representative sits on the UKCCNA: https://pccsociety.uk/.

Outside of the UK, other organisations such as the European federation of critical care nursing associations www.efccna.org/), the Australian College of Critical Care Nurses (ACCCN) (https://acccn.com.au/), the American Association of Critical Care Nurses (AACN) (www.aacn.org/) and the World Federation of Critical Care Nurses (WFCCNA) (https://wfccn.org) provide professional leadership for critical care nursing.

KEY UK REPORTS AND GUIDANCE DOCUMENTS

Kings Fund: ***Critical Care Services in the English NHS*** **(Anandaciva,** 2020**):** This report collates information on critical care services in England. It provides data on the number and type of critical care beds, activity and staffing. The report highlights the response to and impact of COVID-19 on the NHS and critical care specifically, pointing out that delivering sufficient critical care capacity goes beyond physical infrastructure and requires enough trained and available staff (www.kingsfund.org.uk/publications/critical-care-services-nhs).

Getting it Right First Time (GIRFT): Adult Critical Care **(Batchelor,** 2021**):** This data-driven review overseen by NHSE found variation in bed numbers and workforce levels between hospitals, with capacity, culture and resources affecting local decisions on who can be admitted to critical care. Key recommendations relate to improving the efficiency of patient flow systems and the function of existing bed capacity and to improvements to patient recovery and rehabilitation, end of life care and organ donation protocols.

Recommendations also include providing more 'enhanced care' areas, improvements to transfer services and increasing hospital outreach programmes to ease the pressures on critical care services. Recommendations aim to maximise future capacity and avoid the need to delay or cancel surgery for other patients. Full details of the report can be found at: https://gettingitrightfirsttime.co.uk/wp-content/uploads/2021/09/Adult-Critical-Care-Sep21m.pdf.

The Guidelines for the Provision of Intensive Care Services (GPICS) (FICM, 2022): A collaborative publication by the Faculty of Intensive Care Medicine (FICM), Intensive Care Society (ICS) and other affiliate organisations including the UKCCNA, this is the definitive source of planning, commissioning, delivering and quality improvement for adult critical care services across the UK. The most recent version, GPICS V2.1, was published in July 2022: https://ics.ac.uk/resource/gpics-v2-1.html.

EVIDENCE-BASED PRACTICE

Evidence-based Medicine (EBM) was first introduced in 1991 (Guyatt, 1991). Prior to this point, many interventions and practices were based on rituals, traditions and the individual preferences of clinicians. In many instances, practices and interventions lacked a scientific basis and were potentially detrimental to patients' wellbeing and recovery (Swinkels et al., 2002). This approach to care and treatment was expensive, did not provide a standardised approach to management, even for patients with the same conditions, and in turn led to inconsistency in outcomes.

In 2005, an EBM international working group introduced the term 'evidence-based practice' (EBP) and published 'The Sicily Statement on Evidence-based Practice', which includes the following definition:

> *Evidence-Based Practice (EBP) requires that decisions about health care are based on the best available, current, valid and relevant evidence. These decisions should be made by those receiving care, informed by the tacit and explicit knowledge of those providing care, within the context of available resources'*
>
> **(Dawes at al., 2005).**

According to EBP, for care to be effective, the integration of empirical high-quality research, clinical expertise and the patient's values and circumstances is crucial (Straus et al., 2011). Hoffman et al. (2016) expand this to include the context in which the health professional works (e.g. the available resources) (Figure 1.1).

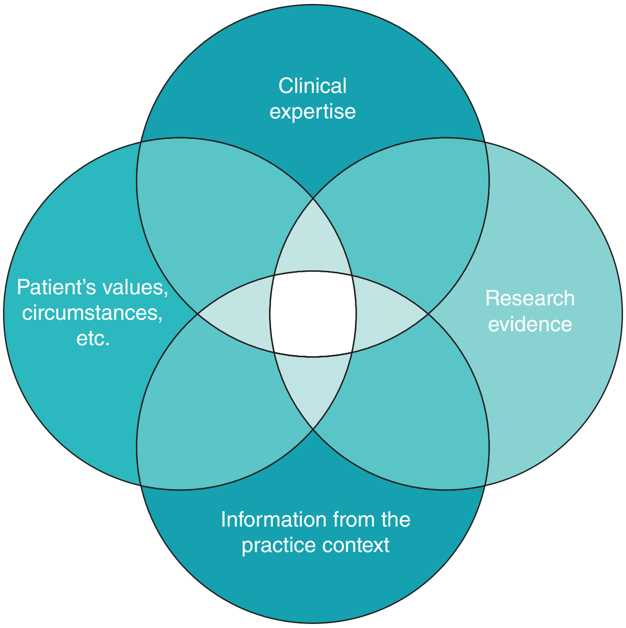

FIGURE 1.1 Evidence-based practice (Hoffman et al. 2016 / with permission of Elsevier).

In practical terms, EBP is the systematic evaluation of published evidence to assess the effectiveness of current practices, and novel or established interventions (Hewitt-Taylor, 2003). Best research evidence in this context is described as:

> *Clinically relevant research, often from the basic sciences of medicine, but especially from patient centred clinical research.*
>
> **(Sackett et al., 2000: 1)**

EBP offers a platform to enable practitioners to make decisions that reflect research findings and to apply empirical data to the care and management of individual patients (Trinder and Reynolds, 2000). It is about developing a vision whereby the quality of care can be advanced not only through the application of patient-centred clinical research but by incorporating systematically generated research-based knowledge, the expertise derived from practice and the preferences and perspectives of those under the care of healthcare providers (Pearson and Craig, 2002).

Delivering care that is based on evidence of effectiveness can standardise service delivery, improve diagnostic techniques, optimise health outcomes and maximise the use of healthcare resources (Bick and Graham, 2010). EBP also enables clinical staff to respond effectively to the needs and demands of changing patient demography (Cook et al., 1996). Similarly, evidence-based clinical effectiveness can be defined as a set of specific clinical interventions which, when used for a particular patient or population, achieves its purposes. The intention is to maintain and improve health and secure the greatest possible health gain from available and limited resources (NICE, 2018).

The ultimate aims of evidence-based practice can be summarised as being to:

1. provide appropriate and effective care
2. standardise treatments
3. make best use of available resources
4. improve outcomes
5. promote safety and reduce harm.

Youngblut and Brooten (2001) provide a useful distinction between practice supported by evidence and practice based on evidence. In the former, for example, articles, but not necessarily research, may be retrieved to support and continue a practice or protocol. In the case of the latter, the evidence from well-designed research studies is systematically reviewed, the recommendations are identified and the practice/protocol amended accordingly.

IMPLEMENTATION OF EBP

The benefits of evidence-based practice have been well documented in terms of standardising care, cost-effectiveness, improving the quality of care and mortality and morbidity outcomes; however, the implementation of research evidence into practice by clinicians can be slow and inconsistent (Eccles et al., 2005). This is known as the 'theory-practice gap' (Greenway et al., 2019). Evidence suggests that it takes an average of 17 years for research to become embedded in clinical practice: the 17-year odyssey (Figure 1.2) (Westfall et al., 2007). The mobilisation of scientific research into a demonstrable patient benefit is known as 'translation' (Woolf, 2008). 'Translational research' is divided into two phases or 'types'. Type 1 translation is the conversion of knowledge from scientific research into a potential clinical product for human testing. Type 2 translation is the process of converting research into healthcare practice (Dougherty et al., 2010; Khoury et al., 2010). Type 2 translation is closer to the notion of the 'bedside' and is what clinicians understand as EBP. This model was adapted further with the addition of Type 3 translation, where research focuses on the implementation and dissemination of evidence-based practice (Westfall et al., 2016). The gap between research and implementation of findings into actual practice is often ignored in the literature, suggesting an under-estimation of the time it takes to implement EBP (Morris et al., 2011).

There are several barriers to research implementation. Time and lack of resources (Duncombe, 2018; Fry and Attawet, 2017; Malik et al., 2016), the need for organisational support, particularly in terms of access to decision makers and those with the agency to make change (Duncombe, 2018), educational opportunities (Jordan et al., 2016; Saunders and Vehviläinen-Julkunen, 2016) and accessibility of evidence (Duncombe, 2018; Fry and Attawet, 2017) all make the transition of evidence into clinical practice complex.

Mentorship to promote research utilisation is vital, enabling staff to learn research skills, including critical appraisal of research papers, and provide them with the confidence to initiate change (Jun et al., 2016). An open and collaborative research culture allows clinicians and researchers to work together to inform and change practice (Malik et al., 2016). In a time-poor environment, administrative support for implementation of research into clinical environments is essential. This lessens the burden and increases the likelihood of effective implementation of

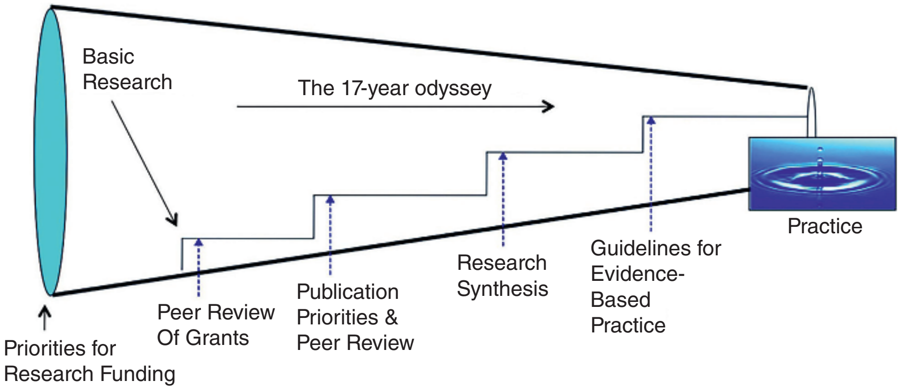

FIGURE 1.2 The 17-year odyssey.

EBP. (Humphries et al., 2014; Varaei et al., 2013). Improving critical care nurses' information literacy skills has been shown to be an additional facilitator for research utilisation (Farokhzadian et al., 2021).

THE NATURE OF EVIDENCE

There is much debate concerning what counts as 'evidence' and how it differs from 'science,' 'research' and 'clinical effectiveness' (Murray et al., 2008; Swinkels et al., 2002). In broad terms, 'evidence' may comprise findings generated from research, understandings from basic sciences, clinical expertise and expert opinion (Youngblut and Brooten, 2001). It may also encompass knowledge from expert patients, particularly those with chronic conditions. This reflects the current consensus that evidence in delivering patient care can come from a number of sources (Bick and Graham, 2010).

However, data from experimental/quasi-experimental trials and case control studies which embrace 'quantitative research' designs are accorded higher status than other forms and sources of evidence. This is due to the perception that data from these study types are more scientific (positivist), bias-free and objective (Murray et al., 2008) (see Table 1.2). Consequently, it is believed that the results of such studies can be replicated and generalised to wider populations. Whilst such studies are instrumental in establishing the safety and effectiveness of clinical interventions and in confidently predicting responses to therapeutic measures (Hewitt-Taylor, 2003), like all studies, this is only true if they are methodologically sound, and the design is suited to the research question.

Within the hierarchy of evidence, large, robustly designed randomised controlled trials (RCTs) are considered the 'gold standard' for determining cause-and-effect relationships and as such have greater potential to influence clinical decision making. However, the results of a single study are usually not sufficient to support a wholesale adoption of either a treatment or clinical intervention. Nevertheless, evidence analysed as part of a systematic review of RCTs may produce findings to either recommend the cessation of accepted treatments and diagnostic tests or the implementation of more accurate, reliable and effective substitutes. Consequently, data produced from RCTs have dominated debates on what counts as evidence, causing confusion for many healthcare practitioners and other healthcare stakeholders (Swinkels et al. 2002).

Table 1.2 Hierarchy of evidence levels

Level	Descriptor
I	Evidence obtained from at least one systematic review of multiple well-designed randomised controlled trials
II	Evidence obtained from a least one properly designed randomised controlled trial of appropriate size
III	Evidence from well-designed trials without randomisation; cohort, time series or matched case-controlled studies
IV	Evidence from well-designed non-experimental studies from more than one centre or research group
V	Opinions of respected authorities, based on clinical evidence, descriptive studies and reports of expert committees

Traditionally, there has been a scepticism about the value of qualitative studies, due to the lack of control, objectivity, perceived rigour and the inability to generalise findings to a wider population (Swinkels et al. 2002). However, in developing clinical practice it is not always methodologically or ethically appropriate to use RCTs to study all aspects of care. In addition, not all practice aspects important to patients can be studied through clinical trials, for ethical, cultural and political reasons (Youngblut and Brooten, 2001).

'Qualitative studies' are typically concerned with understanding human behaviour, experiences and reactions to events, and as such often rely on semi-structured interviews, observations and interpreting data sources such as photographs, biographies, diaries, historical archives and other textual material. Studying the experiences and perceptions of patients can provide useful insights and understandings, unveiling the challenges and difficulties they encounter during critical care unit admission that cannot be captured through quantitative data. Qualitative data and subsequent analysis can also provide insights into whether some treatments are acceptable to patients and highlight directions for possible interventions (MRC, 2000, 2008). Critics of EBP argue that an over-reliance on experimental studies displaces the role of intuitive judgements, unsystematic clinical experience and pathophysiological rationale in guiding decisions about the care of patients (Goding and Edwards, 2002; Swinkels et al., 2002). Many large international RCTs are also funded by industry, often with little input from patient groups or other key stakeholders, with outcomes primarily driven by commercial interests.

Viewing evidence through a single lens offers a distorted perspective of knowledge and evidence, and in the case of quantitative outlook, the approach reduces and objectifies patients into numerical values. Adopting a purely quantitative approach will obscure the opportunity to capture the multidimensional nature of a patient's experiences and perceptions of their illness. Hek (2000) and McKenna et al (1999) advocate including the perspectives of patients, family members or carers and the expertise of clinicians, and combining these with data from rigorous and robust studies to produce a more individualised and informed approach to decision making. This perspective is aligned with notions of patient centeredness and holistic care delivery (Hek, 2000). To this end, research councils now advocate exploratory qualitative studies involving patients to inform the development of complex intervention trials to assess acceptability, compliance, issues of sample recruitment, retention and delivery of intervention (MRC, 2000, 2008).

RCT outcomes are often focused on the average patient, rather than the individual. This distinction is of importance to service users. While public and patient engagement in the UK is contributing to health service development (Department of Health, 2004; NICE, 2010), there remains room for further developing a research agenda that reflects the health needs and priorities of society. The establishment of eight Academic Health Science Centres (AHSC) in England encourages collaboration between all stakeholders, including clinicians, academics and industry partners, to drive forward the dissemination of innovations, the translation and promotion of research, and to support education and training to enhance the delivery of high-quality care provision which is responsive to the needs of the population and which benefits the economy (Department of Health, 2012).

Despite the challenges, there is growing recognition, within critical care and beyond, that qualitative data can complement quantitative results and contribute to the effectiveness of care measures and improve professional practice and the overall quality of the research (Nordgren et al., 2008; Rusinová et al., 2009). A qualitative approach to research can also illuminate contextual features, as well as the success or failure of interventions by understanding patients and healthcare practitioners' acceptance and/or rejection of treatments and EBP respectively (Britten, 2010).

Rycroft-Malone et al. (2004) proposed the use of a broader evidence base that emphasises and places patients centre stage, arguing that effective practice is determined through practitioner interactions and relationships with patients and this can be assessed by drawing up several sources of evidence (see Figure 1.3).

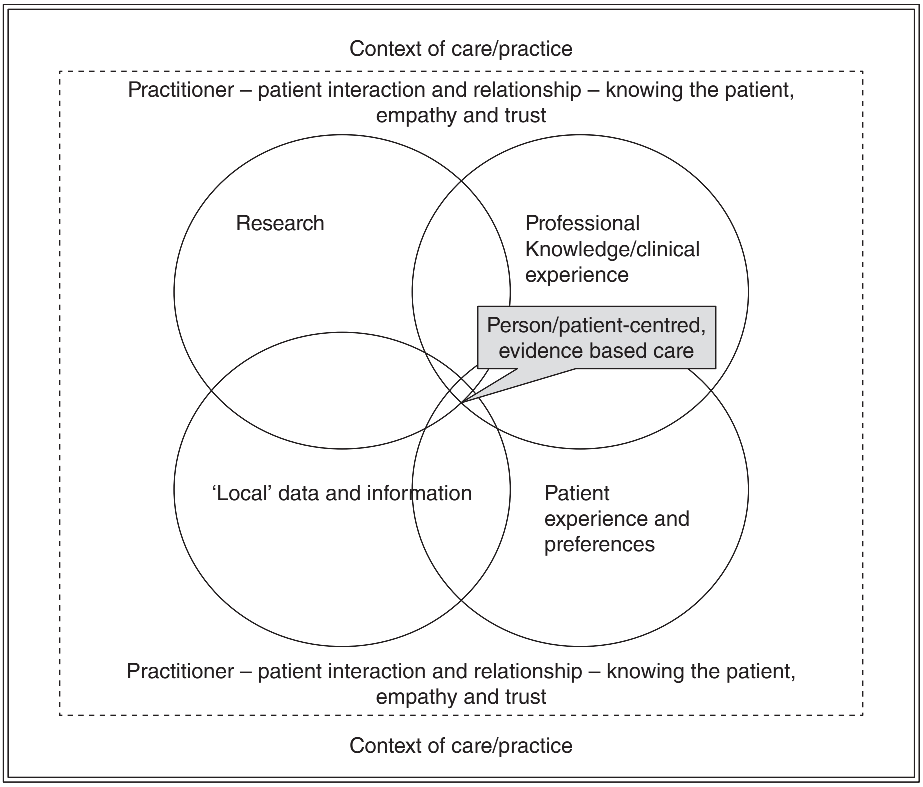

FIGURE 1.3 Four sources of evidence base for patient-centred practice. (Reproduced from Malone et al. 2004, with permission of John Wiley & Sons)

The integration of these elements allows for integration of scientific and empirical sources with practitioner expertise and patient preferences in a more holistic approach. Importantly, knowledge gained from practice and personal knowledge associated with life experiences of dealing with different contexts and patient situations accords a wealth of expertise that practitioners (and some patients and carers) contribute to the decision-making process. This framework recognises that whilst research evidence is vital, care must also reflect the individual's experiences, values and preferences (Rycroft-Malone et al., 2004). Local context can provide a wealth of sources that can shape and improve practice; this can include local and national policies, audits of practice, patient stories and population demographics. All these should be incorporated to inform the evidence base that guides the delivery of patient-centred healthcare. In summary, the Rycroft-Malone model offers an alternative approach in understanding evidence-based practice; it acknowledges that scientific knowledge is key to informing decisions, but it equally acknowledges that practitioners draw on a variety of important sources to guide and shape patient care.

Despite concerns regarding the nature of evidence, there is consensus that to improve patient outcomes and experiences, clinical treatments and care should be delivered in a standardised manner, be cost-effective and low-risk and be informed by the findings of rigorous and robust research. The preferences of patients must be considered and respected, and decisions should embrace the expertise of frontline healthcare professionals. Although there is strong evidence for many interventions used in everyday clinical practice, there are areas and activities where there is little empirical data and guidance is based on consensus views of leading experts.

Critical care nurses and the wider health care team caring for critically ill patients have a responsibility to engage with EBP throughout its continuum and at every stage of their career, ensuring they have up to date knowledge and competence to provide high-quality and safe care based on the best available evidence (Bourgault, 2018). This includes an imperative for critical care nurses to maximise opportunities for embedding digital innovations into their evidence-based practice.

SUPPORTING EVIDENCE-BASED PRACTICE

The National Institute for Health and Care Excellence document *Principles for Putting Evidence-based Guidance into Practice* (2018) outlines four key principles which create and nurture a positive environment for change and help everyone deliver high-quality care and services.

Commitment to quality improvement

National organisations responsible for overseeing quality across the NHS, public health and social care have agreed seven steps to improve quality. These steps outline what all of us need to do to maintain and improve the quality of care that people experience.

1. Use evidence to set clear direction and priorities.
2. Clarify what high-quality care looks like.
3. Measure and publish quality metrics.
4. Recognise and reward quality through the celebration of outstanding care.
5. Maintain and safeguard quality.
6. Build capacity through leadership, culture, education and behaviours.
7. Develop research, innovation and plan for progressive, high-quality care.

National programmes such as those led by NHSE focus on improving quality by reducing variability using the NICE (2018) guidance and standards to underpin their work. From a critical care perspective, the GIRFT Adult critical care publication (Batchelor, 2021) is an excellent example of this.

Effective leadership

Successful change processes have strong, visible, proactive and inspiring leadership at all organisational levels (individual, team, organisational and national). Effective leaders are committed to providing safe, effective and efficient, high-quality care and services. They build trust across organisational and professional boundaries and with patients and service users and carers. They are motivational, compassionate, inclusive and focused on continuous improvement and they celebrate success and learn from failure. This all creates an organisational culture which is open to change and ready to learn. Leaders need to empower others to push the boundaries of what is possible and make change happen more quickly to positively transform care and services.

Supporting the development of future clinical-academic critical care nurse leaders who can generate research based on clinical need and who are in a strong position to support translation is also vital. In 2021 the Chief Nursing Officer in England published a strategic plan for research identifying five priority areas, which include developing both individuals and the infrastructure to support research engagement (NHSE, 2021). The National Institute of

Health Research (NIHR) in England has also prioritised nurses' research development over recent years, extending the funding and support resources available to support future clinical-academic nurses throughout their career.

The right culture

The dissemination of power away from traditional hierarchies and systems promotes openness and collaboration. An organisation's culture shapes the behaviour of everyone in the organisation and directly affects the quality of care they provide.

Embracing a new shared power organisational belief model can foster a positive, open culture focused on quality improvement (Heimans and Timms, 2014).

Working together

Co-production is at the heart of the most successful improvement/implementation projects. Co-production is defined as 'a way of working that involves people who use health and care services, carers and communities in equal partnership; and which engages groups of people at the earliest stages of service design, development and evaluation' (NHSE, 2023a).

Working with people with different perspectives and skills who work in or who are affected by a service builds on everyone's experiences and ensures that any changes genuinely support people using the service as well as staff. Despite the challenges, it is important that we consider how to do this in critical care. A minority of survivors of a particular demographic tend to be involved in co-developing new services, either through quality improvement or research (Bench, 2019). We need to consider how to involve the wider population, e.g. those with disabilities that affect their ability to communicate, those from certain ethnic groups and bereaved families. Only in this way will our services and interventions meet the needs of the patients and families in our care.

CLINICAL GOVERNANCE

Clinical governance is another approach to increasing healthcare quality. Although healthcare professionals aim to provide high-quality care to all those who need it, this has not been universally achieved, with some catastrophic harm caused to individuals and communities by healthcare organisations.

Some harm has come from ignorance of what helps, some from ignoring user feedback or data and some from errors – generally caused by systemic problems. Insufficient staff or staff who do not have the right level of training can lead to harm. More subtly, some acts do not cause harm directly but waste resources and prevent their use to help people. The Institute of Medicine reported many years ago on avoidable harms (Institute of Medicine, 2000), but harm continues to be caused, with some high-profile cases.

HCPs have a duty to provide high-quality care. Trust boards also have a duty to ensure high-quality care is delivered '...the board of directors takes final and definitive responsibility for improvements, successful delivery and, equally, failures in the quality of care. Effective governance therefore requires boards to pay as much attention to quality of care and quality governance as they do to the financial health of their organisation' (NHSE, 2023b). Clinical Governance is a duty of NHS trusts.

The NHS overall has a strong quality agenda, though the changes over the years in national bodies supporting this can confuse clinicians. Currently we have the Healthcare Quality Improvement Partnership and the National Quality Board (among others). There have also been a number of recent changes to address patient safety, including the Patient Safety Incident Response Framework (PSIRF), which details the NHS's most recent approach for responding to patient safety incidents, that facilitates both learning and improved patient safety (NHSE, 2023c)

Although national support is vital, individual clinicians provide the care and must ensure that their personal practice is high-quality. A key recommendation from the Berwick report into the breakdown of care at the Mid-Staffordshire hospitals was that 'Mastery of quality and patient safety sciences and practices should be part of initial preparation and lifelong education of all health care professionals' (National Advisory Group on the Safety of Patients in England, 2013). HCPs have a duty to continuously improve the quality of care.

Clinical governance is one route to achieving this. It is 'a system through which NHS organisations are accountable for continuously improving the quality of their services and safe-guarding high standards of care by creating an environment in which excellence in clinical care will flourish' (Scally and Donaldson, 1998). Clinical governance is generally described as having seven pillars (Patient and stakeholder experience, Staffing and staff management, Education and training, Clinical audit, Information management and communication, Risk management and Clinical effectiveness). These could be grouped into four themes:

Theme: Patient and stakeholder experience:

> This emphasises the importance of involving patients and stakeholders in decision-making processes and assessing their experiences with healthcare services. Patient feedback, engagement and satisfaction are integral to improving care delivery and patient experience.

Theme: Staff:

Pillars: Staffing and staff management; Education and training:

The right numbers of staff with the right knowledge, skills and behaviours are needed. Staff should be enabled to continuously develop over their career as new evidence emerges and best practices change.

Theme: Monitoring care and acting on the findings:

Pillars: Clinical audit; Information management and Communication; Risk management:

These pillars are around monitoring of care provided and then using the information from this to improve care. This could be regular monitoring (clinical audit), management of risk – looking for risks, learning from incidents and building an effective safety culture; and systematically using data to improve care delivery.

Theme: Clinical effectiveness:

Clinical effectiveness focuses on ensuring that healthcare interventions are based on the best available evidence and lead to positive outcomes for patients. It involves implementing evidence-based practices, guidelines and standards to optimise the quality of care and improve patient outcomes.

Clinical effectiveness must be a key focus for HCPs. This may be working with policies, procedures and guidelines or helping develop them. However, providing care is more than following a list of actions. Caring for a patient on non-invasive ventilation is not just about setting an optimal PEEP but about negotiating with that person at that time that they should keep the mask on, and knowing when they could take a break. Lists of procedural actions are not always useful, they can't cover every eventuality and it is necessary to understand why an action is being advised. HCPs must understand the rationale for the guidance to understand when an action is vital for safety reasons or when it could be varied if needed for an individual. At the same time, the best-written source of knowledge doesn't always enable the reader to use that knowledge in practice.

CONCLUSION

This book aims to provide practitioners with both practical procedures and the appropriate background to make informed decisions about the care of the critically ill based on the best evidence available. The first edition contained competencies specifically written for the book. Since then national critical care competencies for nurses have been produced by CC3N. These are now in their second edition with a third being prepared, and are used in nearly all ICUs in England (CC3N, 2020). They are fully supported by the editors of this book and thus we refer readers to the CC3N competencies (www.cc3n.org.uk/step-competency-framework.html), which are increasingly being used online through the NHS Digital Learning Solutions platform (www.dls.nhs.uk). In addition frameworks to support competency development for other professions within critical care are increasingly available.

Our aim is to guide critical care practitioners to develop skills, knowledge and clinical competence, to promote their confidence and comprehensively advance their practice within the field of critical care and beyond. To achieve these aims the chapters have been structured to facilitate depth of learning, skills and competence in a range of patient situations. Following Chapter 3, each chapter introduces the practice area and provides background information, including relevant anatomy and physiology to support the applied understanding of treatments/interventions and their relevance to improving patient outcomes. Each chapter concludes with a summary of key points and appropriate procedural guidelines.

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