

EVIDENCED BASED PRACTICE IN INTENSIVE CARE UNIT

Abstract

By using current knowledge and best evidence practices to make decisions about how to care the critically ill patients to get the best outcomes. In ICU where patients are suffering from life threatening conditions so the fully dependent upon highly advanced equipment and the medications. ICU should highly organized and designed in such a way to meet all the needs of the patients. Having skilled personnel with following evidenced based practices to promote the delivery of patient care, cost-effective, enhancing patient and family satisfaction with professional development.

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I. INTRODUCTION

The most recent research, provider knowledge, and patient expectations are all used to guide decisions about care in an evidence-based practise (EBP). The steps of EBP involve learning about a patient's condition, gathering information, analysing the evidence, incorporating it into your treatment plan, and assessing and communicating the results.

II. MEANING

Current research is used to guide decisions regarding patient care in evidence-based practise (EBP). EBP aims to reduce expenditures and variations in health outcomes while enhancing patients' overall care and safety. There are three main parts to EBP. It strives for the greatest results by utilising the best external evidence available, utilising the clinical knowledge of the caregivers, and taking into account patient input and expectations. A comprehensive treatment plan that incorporates the patient's preferences and the knowledge of healthcare professionals is the outcome of this technique.

III.ELEMENTS OF EVIDENCED BASED PRACTICE

Evidenced based practice elements are comprised of varying levels of evidenced. These levels measure the validity and quality of research and studies.

1. Level-A: Most health care professionals consider LEVEL A evidence to be the most valid and strongest among scientific studies and research. Level-A results from-

- **Randomized trials-** It involves randomly selected volunteer subjects who undergo strictly controlled experimental conditions and interventions to produce unbiased results from the study.
- **Systemic review or meta- analysis:** This includes thorough assessment of existing evidenced that addresses a clinical question. Researchers may also use data analysis and statistical review as determining factors.
- **Clinical practice guiding:** It may provide the strongest evidence of quality and validity based on rigorous reviews of currently accepted helath care practices based on research and scientific confirmation.

2. Level-B: Health care professionals may considere level-B evidence to be moderately valid among scientific studies and research. Level -B results from-

- **Non randomized control trials:** In non-randomized control studies, its not guaranteed that volunteer subjects share equal demographic and clinical bvariables. This may hinder the study's validity, but many researchers recognize non-randomized clinical trials as being as effective as randomized trials.
- **Clinical cohort studies:** Cit involves the assessment of subjects who have common and uncommon exposure levels to certain physical stimuli or environments to determine cause and effect.

- **Case-controlled studies-** In this study observation of volunteer subjects with known diseases or outcomes compared to subjects without diseases or outcomes. Professionals can use these studies to estimate the odds of developing certain diseases and outcomes and the factors that influence the probability.
3. **Level-C:** Health care professionals may consider Level-c evidence to be the least among scientific studies and research. Level-C evidence my results from-
- **Consensus viewpoint and expert opinion:** These studies often include review panel of clinical experts that obtains majority agreement about specific health care practices. This type of study often occurs when there are no existing qualitative or quantitative studies on a particular practice.
 - **Meta-analysis:** In this study assessing evidence derived from research to apply minor aspects of larger studies, such as individual case studies, to clinical applications.

IV. IMPLEMENTATION OF EVIDENCED BASED PRACTICES

1. **Picot:** A standardized format for asking the searchable, answerable question: population of interest (P); the intervention or issue of interest (I); the comparison intervention, if relevant(C); the outcome (O); and time frame (T), if relevant.

Most health care professionals cannot devote the time necessary to assess all existing levels of evidence before implementing EBOs. Instead, they may rely on a series of steps to ensure effective EBP procedures. Which includes following steps-

- **Ask questions:** Before applying an EBP to an existing treatment or protocol, it's important to ask questions about possible ways to improve current practices.
- **Access and appraise evidence:** After determining how and why an EBP may improve current procedures, you may request access to improve evidence to confirm their theories. You might contact clinical research libraries, ask academic institutions for access to published studies and archives. After locating the necessary documents, you can sort, read and review relevant literature to better understand the validity of your EBP application theory.
- **Apply findings:** If the literary findings confirm that applying an EBP may offer improvement, you may add this information to your clinical decision – making methods. You may also integrate this new knowledge to form evidenced based recommendations for day-to-day practices.
- **Evaluate the outcomes:** After implementing an EBP to existing practice it's important to review the data and document the success of your approach along with any revisions or changes made to the original procedure and outcomes of EBP integration.
- **Sharing the results of EBP integration among health care staff can improve patient outcomes through the exchange of innovation and improvements to current methods. And also encourage other health care professionals to make valuable contributions to future EBP.**

2. Benefits of ebp

- **Prioritized patient needs-** Although EBPs rely on research, they also consider a patient's desires. An effective EBP helps you continue to improve patient outcomes while weighing the preferences and experiences of each patient.
- **Time-saving decisions-** An EBP can save time for a care team, preventing actions that have no known benefit to the patient. They know what protocols or treatments that have no benefits to the patient. They know which treatment and protocols works best for certain patients or in specific circumstances.
- **Up-to-date knowledge-** It can help keep care practices current and relevant, increasing your confidence and decision-making skills while contributing to the science of the profession.

V. MODELS USED FOR EVIDENCED BASED PRACTICE

1. **Iowa model for evidenced based practice to promote quality care:** With the use of a team-based, multiple process, it has been redesigned to better address EBP sustainability, interprofessional change implementation and patient centred care for clinicians at all levels of practice. The path begins with a clinical trigger that identifies a clinical issue and includes decision points with evaluative feedback loops when suggesting and implementing practice change. The steps of the paradigm are interprofessional team building, review, critique and synthesis of the evidence, change implementation through piloting, ongoing evaluation and dissemination of results.
2. **Advancing research and clinical practice through close collaboration model:** It is employed to develop resources and train mentors, who are crucial to the facilitation and maintenance of EBP at the point of care and across the business. The model consists of seven steps- developing an attitude of inquiry, formulating a clinical question using PICOT format gathering, critically evaluating and integrating the best evidence with clinical expertise and patient preferences, also assessing and communicating the results of practice change.
3. **Johns hopkins nursing evidence-based practice model:** Since it is clinical -focused, it enables the quick and effective adoption of recent findings and best practises. It fosters a culture of evidence-based care and streamlines the EBP process. Overall, it consists of three steps- practice questions, evidence and translation.It directing tools are made for working individually or in groups, practice clinicians to address clinical queries.
4. **Promoting Action on Research Implementation in Health Services (PARIHS) framework:** The integrated or I-PAEIHS framework has been updated. Evidence-based change is referred to as practice innovation in the framework. It asserts that the sort of evidence available, the context of the care setting and how the process is enabled, are key factors in the effective adoption of practice innovation. The framework places a strong emphasis on the value of taking into account the viewpoints of all those who will be affected by the desired change.

VI. QUALITY CARE IN INTENSIVE CARE UNIT BASED ON EVIDENCED BASED PRACTICE

Patient outcomes that are of high quality are the main objectives of healthcare. The use of evidence-based practise (EBP) is seen as a means of achieving these objectives. Although healthcare professionals aim to base their decisions on the best available research, there are many obstacles to establishing and maintaining EBP in nursing, according to the literature. A first priority is creating an organisational culture that maintains the EBP process. Tertiary facility with 152 critical care beds, multiple specialised units, and a wide range of patient groups launched an innovative technique to encourage an EBP culture. In order to use evidence to enhance care for the critical care population, a multidisciplinary committee was established. A literature review was used to find EBP projects. This novel strategy improved patient outcomes.

Multidisciplinary teams have started to consider ways to raise the standard of care provided inside the healthcare system. The development of initiatives aiming at enhancing the standard of care within companies has been centred on this criteria. Numerous metrics, such as those emphasising structural metrics, process metrics, or result metrics, have been utilised to direct quality improvement projects.

Measurements that are reflective of the system or environment in which care is provided or the method in which care is organised are referred to as structural measures. The quantity of operations performed, the number of qualified surgeons employed by the organisation, the size of an intensive care unit (ICU), whether the unit is open or closed, and the level of technology accessible are a few examples of structural measures. Processes describe the actual treatment given to the patient or evaluate the work we do as practitioners. Daily sedation interruption, deep vein thrombosis prevention, and daily spontaneous breathing trials are a few examples of process measurements that can be used in an intensive care unit (ICU). The third method of evaluating quality refers to the outcomes that are achieved and is known as measuring outcomes like morbidity, mortality, length of staying in hospital and readmission rates etc. Other frequently measured variables for ICU- ventilator associated pneumonia, central line bloodstream infections.

The term "evidence-based practise" refers to a investigative strategy whereby a healthcare professional makes clinical-decisions based on factual data, their clinical expertise, and the preferences of their patients in light of the resources at their disposal. The healthcare team should base its decisions on best practises in order to deliver the highest quality care possible. To create best practises, it can be necessary to collaborate with team to assess the strength of the evidence before giving a review.

VII. STRENGHT OF EVIDENNCE TO SUPPORT PRACTICE

1. Level -I Meta analysis of multiple studies
2. Level-II Experimental studies
3. Level-II well developed quasi-experimental studies
4. Level-IV well developed non-experimental studies
5. Level-V case reports and clinical examples

Evidence based practice it's a way to deliver the high quality care, it depends upon the decision making, our expertise. The group must choose both the practises to change and the model to lead this process if it is to adopt evidence-based practise improvements and raise the standard of care offered inside the organisation. The creation of a committee to support evidence-based practise and quality improvement is the best way to implement this strategy in practise.

Effective implementation of concepts in to commentative care is one example of EBP's organisation, procedure, and results. This was made possible in our modern practise environment because to the creation of. "Rules of Evidence Committee." The work of this committee served as cornerstone for the execution of quality improvement initiatives, the development of evidence-based policy and procedure changes, and the promotion of bedside process.

1. Design: The hospital has eight intensive care units (ICUs) with a total of 152 beds, making it an 834-bed teaching hospital. There is a nursing unit director and a critical care physician on staff in each ICU. Also assigned to cover the ICUs is a clinical nurse specialist (CNS). A nurse with a master's degree in clinical nurse specialist (CNS). The CNS's practise is centred on providing treatment to clients and their family members, assisting the health care professionals, and affecting change in systemic level. In addition to being a leader and mentor, the CNS also performs the roles of expert practitioner, educator, consultant, and research facilitator. The clinical nurse specialist (CNS) at this hospital was in charge of providing high-quality, affordable care in this setting, so she started looking for initiatives to meet the goal.

Our committee was created in 2002 somewhat accidentally. A number of the critical care workers participating in a project and planned to enhanced the quality care while clinical nurse specialists educating the staff nurses on prevention of ventilator associated pneumonia according to the protocol. This led to the collaboration of nursing and critical medicine. The effectiveness and long-term viability of the committee have been directly impacted by this leadership structure.

The committee's initial objective was to concentrate on prevention of VAP. To carry out these initiatives, a multidisciplinary team was assembled, and members are chosen according to their expertise. We wanted each ICU to be represented by a staff nurse. This made sure that the patients in our nine ICUs, who are a rather diversified group, were represented. The nursing team members are chosen by the director of nursing or offered their services freely. Members of the multidisciplinary committee included representatives from the nursing staff, physicians.

It's significant to notice that support for nursing administration was included. In order to successfully ensure that staff members attend meetings and participate in project implementation, administration reinforcement is essential. In addition, a local university's nursing faculty member collaborated with the team to help with data collecting, analysis, and staff education.

The objective of our group was to "enhance patient care in our critical care population by incorporating best practise standards into routine patient care." The Rules of

Evidence committee was the name of the organisation. All practitioners should follow the rule of evidence (ROE) when providing care to critically sick patients on a daily basis. As comparing to standard practise, patient centred care outcomes are better when a ROE is supported by evidence. Meeting held in a month and time based upon group consensus around 1-1.5 hours. Agendas are distributed prior of their meeting so that the group can prepare.

- 2. Process:** Initial period its crucial that the nurses and doctor serve as the project's directors. This gave them the chance to set an example and show off the abilities needed to promote change. To increase the committee delegates' proficiency and assurance in EBP, the CNS thoroughly described each stage to them. The ultimate goal was to gradually give the staff nurse more responsibility and independent work as their skill and experience grew. CNS lead would be step one, involvement of staff nurses and staff nurse representative would be phase two, and staff nurse identifying and leading initiatives would be phase three. The ICU team would have completed at-least one project a year.

Phase-1: The following steps are

- Identify the necessities for change
- Connect the issue, the solution, and the results
- Compile the strongest proof.
- Create the new practise.
- Bring about and assess a practise shift
- Implement and sustain the practise change.

The first step was determining the necessity of change, and at the time VAP had been established as an important part of treatment due to the highest prevalence of pneumonias in hospitals that had been recorded. The facts on VAP related to an increase in mortality, length of stay, and cost were presented at a conference to highlight the importance of VAP. Then it was determined which academic works supported the practical modification. One randomised trial was among the numerous studies that were found. The CNS provided the committee members with this literature so they would understand the justification for a practise change. Additionally, this exercise was helpful in showing how to look for and combine literature. A HOB procedure was being developed on the basis of the literature.

The fourth step, designing the change, took a lot of time. It was simple to set goals for reducing mortality, ICU LOS, and VAP. Because 10 medical directors at the time had to concur on the HOB methodology, developing this process took more than nine months. At this point, the leadership of the doctors was essential. The committee charged with creating the protocol and the ICU medical directors were in communication with each other through the ICU physician leader. A conventional HOB elevation of 30° was accepted by some doctors, but others believed that 45° because the angle used in published randomised trial comparison of elevation of bed and ventilator associated pneumonia. To aid in their education in the process, ROE committee members received updates on its status and problems.

During this process, the leadership also picked up new skills. Prior to implementation, we aimed to create the ideal protocol, but this wasn't accomplished.

Following the establishment of a general understanding of the protocol, it was decided to move on with the implementation stage while being ready to make adjustments as necessary. The process's implementation phase turned out to be the most challenging.

Education is seen as the first stage in any practise. We used a self-study VAP course that was required of all respiratory therapists and ICU nurses. Teaching approach was also given to radiology technicians and physical therapists. All of the ICUs have a poster outlining the evidence-based focus on HOB elevation to prevent VAP and providing information on the HOB protocols. One doctor even proposed the notion of posting a logo and notice at patient bedsides to alert personnel to the project. Protocols attached in their bed site for documentation, to make it easily available. Additional instructional sessions based on units were offered.

The specialists nurse conducted rounds per week in all ICU during the initial phase to monitor compliance with the HOB programme, as well as to give staff members tailored education and to address any questions. Additionally, the rounds gave the units data that enabled prompt feedback on compliance. Monthly feedback was given along with graphs comparing unit VAP rates to HOB compliance rates. The charts, which were displayed throughout the facilities, were useful instructional aids for the employees.

Compliance with the HOB elevation protocol eventually rose from the initial 30% to 70%. Messages were distributed to staff members via email and an ICU newsletter to inform them of this accomplishment. An further implementation approach was implemented using the hospital's electronic medical record because the results were still unsatisfactory. when the CNS was on the ward, staff members hurried to get patients' HOB increased. The medical leader, on the other hand, was worried with the amount of time needed to finish this task. We contrasted the outcomes of the two tests to see if the charting of HOB was accurate. Initial findings showed that there was only a 31% average agreement between the patient's real posture and what was charted.

VAP was found to be multifaceted throughout the course of this research, including standardising oral hygiene, using sterile water for oral hygiene, and checking endotracheal cuff pressures. The process is still being evaluated, and the proportion of VAP rates is still being monitored.

Phase-2: We began a phase two project after finishing our demonstration project with the intention of enhancing the nurse's competence in the EBP process. To give people the knowledge needed to search the literature, classes were offered in the on-site library. Information on data collection techniques was also supplied. The nursing faculty helped in teaching methods for evaluating literature critically. Additionally, it was decided that in order to achieve our improvement goals, it was crucial to explain to the group how project themes were chosen. In order to achieve our objectives of enhancing care for our ICU patients, it was also decided that it was crucial to explain to the group how themes were chosen as projects. A good EBP project should have an impact on a crucial aspect of patient care, such as mortality, quality, or costs, it was noted during sessions on this topic. Although we did not formally audit the group, participants expressed satisfaction with the learning possibilities. To complete this work, collaboration with the pharmacist was also required. The policy and procedure committee, pharmacy and therapeutics, and other

committees all have to approve the protocol. Attending these meetings exposed the staff nurses to the procedures needed to facilitate transformation. Pre and post intervention data collection was aided by additional workers. The process metrics are still being monitored.

The committee representatives disseminating the protocol and educating their units was the major shift. Thought about by phase two. With their input, the CNS created a PowerPoint presentation for teaching purposes. Using the insights from change theory, we once more used a variety of educational platforms to spread the word, including posters and the ICU newsletter. The representative was regarded by the unit employees as the "expert" person who could answer queries.

Phase-3: In the third phase of our committee's discussion, which transferred the attention to the representatives from each unit. A CNS student from our nursing faculty led our first project that was managed by a team of other members, which helped to guarantee that it was finished. The committee used it to engaging the staff nurse in this time remains incredibly challenging.

- 3. Key points:** The CNS and physician leader's partnership is the most crucial element in the committee's success. The fact that the doctor shows up to every meeting makes a big statement to the group about how essential the task is. Additionally, the CNS can consult the doctor whenever it needs advice.

Changes in our group's membership have occasionally hampered the pace of some projects, but in other cases, new members have brought new perspectives to the table. Since this format will enable the committee to gain from new participation as well as cultivate additional "champions" in EBP. The fact is that participation at monthly meetings can be low in some months, which also has an impact on production.

The range of specialties in our nine ICUs, the effort needed to gain consensus across different disciplines, and general resistance to changing practise from multiple areas all contribute to implementation challenges at each level of the process. The project's work was maintained, and the leadership used a consistent method of project development to try to overcome these obstacles.

Although focusing on compliance metrics and results is a crucial part of process improvement, it can take a lot of time for the CNS. Committee members gathered data by using appropriate resources and analysed it and find-out the outcome to enhancing the quality care.

It's crucial to highlight the committee's accomplishments in order to build momentum. At regional and national conferences, nursing members have presented projects.

VIII. CONCLUSION

It is crucial that we concentrate on giving patients the finest care possible. By following the protocol for monitor treatment, healthcare professionals can guarantee that high quality care is delivered. It is also crucial that the care given is supported by reliable scientific research.

One method to achieve this is to create a multidisciplinary committee that focuses on quality and makes use of the best available evidence. In conclusion, we discovered that success came from creating a committee with important leadership to drive the team in order to prioritise initiatives, implement change, and assess performance. Additionally, our multidisciplinary team provided staff nurses with the chance to learn about EBP and advance their skills under the strong nursing and physician leadership.

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