

## Is Your ICU Patient-friendly?

The specialty of critical care medicine began to develop in the late 50s. Since then, huge improvements have been achieved in terms of technological advances and understanding of the pathophysiology and pathogenesis of the disease processes that affect critically ill patients. But believe me, it's not only the expert clinical management that affects the ultimate outcome but also the healing environment and humane approach in intensive care unit (ICU) that determines the outcome as well as patient and family satisfaction. Stepping into the 21st century and utilizing Florence Nightingale's concept, today's critical care medicine environment encompasses a holistic patient centered approach that includes a pleasing physical setting and a supportive organizational culture [1]. There is a resurgence of interest by healthcare designers and providers as well as emerging demand by patients and families for healthcare facilities that incorporate the ambience of healing into the architecture, artwork and philosophy. Stichler et al in their review reports that patients experience positive outcomes when the environment incorporates natural light, natural elements, peaceful colors, soothing sounds, pleasant view and an overall pleasing aesthetic essence [2]. Psychoneuroimmunology refers to the physiologic response of the body to psychological and environmental stressors [3]. Psychoneuroimmunology research emphasizes that emotions influence immunological functioning

and that too much stress has a negative impact on the functioning of the body's immune system. In simpler terms, stress negatively affects patient's ability to heal. Creating physical environments that support families and patient's psychological well-being, by contrast can produce a positive impact on therapeutic outcomes, reduce stressors, and improve staff performance and morale [4]. Measurement of family satisfaction is recently proposed as one of the several quality indicators of ICU care [5].

Every intensivist as well as hospital management strives to make their critical care units state of the art in terms of clinical expertise and clinical care delivery. But most of the time we forget a simple but valid argument: Is my ICU patient-friendly? How to create a healing environment in ICU, not only for the patient but also for the patient's relatives, not only to take care of the patient during ICU stay but also during recovery post ICU care and post hospital discharge. Not only to provide quality care to save the patient's life but also have bereavement services (life after death). In fine details, patient-friendly ICU caters more individualized humane touch to clinical care.

When designing a new ICU from "scratch", project engineers can utilize the abundance of research and knowledge for implementing an aesthetically pleasing and healing environment. It really is an ardent task to create a healing environment within the chaos of a critical care setting, but the potential benefits are well worth the effort. I will

enumerate few pivotal aspects and interventions that can make your ICU patient friendly. A patient friendly ICU is dependent on multitude of factors

(Figure 1).

In patient related care, we should remember the famous Hippocrates quote, "make a habit of two things, to help or at least to make no harm". To mention a few, we have to avoid mechanical restraints as much as possible and protect the patient from injury through pulling the invasive lines and tubes etc. Special care should be taken to provide eye care and position changing on bed at regular intervals. At all times, patient's privacy and dignity should be maintained especially when the patient is in altered sensorium or unconscious.

Survivors of critical illness often experience new or worsening impairments of physical, cognitive, and/or mental health, referred to as Post-Intensive Care Syndrome (PICS) [6]. Such impairments can be long-lasting and have a negative affect on survivors' quality of life. Early rehabilitation in the intensive care unit (ICU) while patients remain on life support therapy, may reduce the complications associated with PICS [7]. Early rehabilitation and physiotherapy is associated with improved muscle power/less ventilatory support/shorter ICU and hospital stay/less expenditure/improved quality of life [8].

A very pertinent question - Have you ever tried to sleep in a brightly lit room, with tubes and wires attached, and with people periodically talking, touching, and moving you? I must say poor sleep is one of the most common patient related complaints in ICU. Sleep disruption affects a patient's experience both during ICU admission as well as afterwards for survivors. There are so many factors that affect sleep in ICU like noise, light, patient care activities, pain, dyssynchrony during ventilation and medications. To optimize sleep pattern in ICU, one must manage wisely different modifiable factors like noise, light, temperature level and timings of patient care

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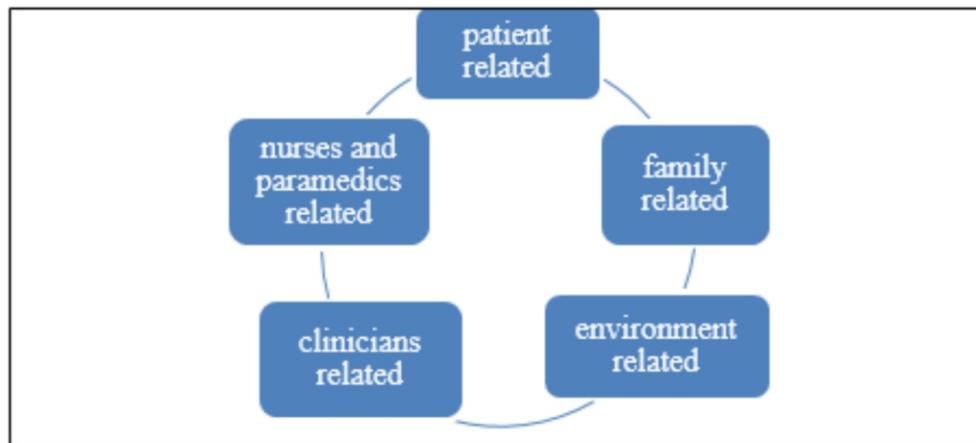


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**Figure 1:** Factors for a patient friendly ICU

activities. Judicious use of sedatives and analgesics play a major role in current critical care practice. Society of critical care medicine (SCCM) in their latest guidelines summarizes management of sedation, analgesia and delirium in critical care practice [9].

eCASH—early Comfort using Analgesia, minimal Sedatives and maximal Humane care strategy, which may be regarded as an evolution of the Pain, Agitation and Delirium guidelines, is conveyed in the newly coined mnemonic [10]. eCASH aims to establish optimal patient comfort with minimal sedation as the default presumption for intensive care unit (ICU) patients in the absence of recognized medical requirements for deeper sedation.

Now there are new complementary therapies (music at the bedside, healing touch, massage) practiced to offer soothing and smooth experience during and after intensive care unit stay.

Noise is one of the most insidious environmental stressors found in the hospital environment. Several studies have confirmed that peak noise levels in ICUs are far in excess of 45 dB during the day and 35 dB at night (recommendations of the Environmental Protection Agency).

The critical care unit, with the advent of new technologies and increased monitoring equipment, adds even more

auditory stimuli. These unfamiliar and unexpected noises can startle anyone, in particular a patient already stressed from physiological strain. A constant barrage of unexpected noises has physiological manifestations as well, such as interrupted sleep.

While designing a critical care environment that provides patient friendly atmosphere by reducing ambient noises, many design elements; such as flooring, ceiling material, doors and nursing station placement can be taken into consideration [11]. Creating mini-workstations throughout the unit to reduce noise from conversations by dispersing staff away from a central station may help in reducing escalating noise level in critical care unit.

Generation of unnecessary noise can be abated with modification of staffs' behavior. Most important is the education of nursing and medical staff on the effects of their behaviors on the noise level and pollution in the critical care unit [12]. Creating a culture among the staff that fosters a healing environment includes encouraging behaviors that decrease unnecessary noise, such as keeping hallway conversations low especially at night, avoid over-the-bed conversations, turning pagers and cell phones to vibrate, turning off unused biomedical equipment, and modifying or repairing unnecessarily loud equipment [13].

Along with facilitating staff behaviors that decrease unnecessary and noxious noises, therapeutic sounds can be introduced such as music, heartbeat sounds (especially in the neonatal ICU), pleasant sounds from nature like ocean waves and rain showers or even “white noise” that lightly stimulates the hearing receptors, making other background noises less obvious. The critical care unit is typically bright and devoid of full spectrum light, instead featuring primarily harsh artificial lighting. Artificial lighting is predominantly fluorescent and produces visual fatigue and headaches. Many ICUs are designed without windows or position the patient's bed in such a manner that it does not allow a view of the window. Although light is a vital element of a healing environment, continuous light disrupts the natural circadian cycle and contributes to drops in melatonin levels. If the light is so intense, the person can even experience a total cessation of melatonin production. Melatonin helps facilitate sleep, and decreased levels can cause impairment in sleep patterns, which can then lead to delirium in critically ill patients [14]. Without the influences of day and night, the human body's natural circadian rhythms are disturbed, which can result in disorientation, delirium, or even ICU psychosis which may lengthen or jeopardize a patient's

recovery. Few interventions like the use of 'virtual darkness' by providing amber lenses to filter the impact of artificial electrical light (blue light) can be helpful. Studies have shown that decreasing noise and turning the lights down decrease patients' anxiety, which with other factors decreases the incidence of delirium. It's advisable to accommodate a patient's preferable temperature range, particularly at night, in order to promote sleep.

In addition to the effects of the physical environment on a healing environment in the critical care setting, social support is a key element. Social support includes emotional and psychological support provided by family and friends that is influential in a critically ill patient's recovery [15]. As a part of the health care team, families can assist with being present during spontaneous awakening trials (SATs), delirium assessment and interventions, early mobilization/coach the patient and encourage in activities. Liberalizing family visitation for the critically ill is an emerging concept in providing a holistic approach to healing though open visiting hours may not be appropriate for all patients. Family presence during procedures and emergencies is now being advocated. Several studies from multiple countries have identified the value of using family satisfaction ratings to identify potential targets for improving ICU care [16]. These studies have demonstrated that

patient- and family-centered decision-making, communication, and respect and compassion were strongly associated with overall satisfaction. It is important to investigate how patients and families perceive their critical care experiences while creating a healing environment. It is equally important to research what causes stress for patients and families and which stressors of a critical care experience need to be reduced for patients and families to feel safe and secure during their stay. Empowering patients by giving them control over temperature, lighting, privacy, visitation decreases stress and improves healing.

ICU clinicians must ensure that patients die with dignity when the organ dysfunction of critical illness defies treatment, when the goals of care can no longer be met, or when life support is likely to result in outcomes that are incongruent with patients' values [17]. Providing a holistic approach during end of life care is of paramount importance to make one's ICU patient friendly.

Recommendations include endorsement of a shared decision-making model, early and repeated care conferencing to reduce family stress and improve consistency in communication, honoring culturally appropriate requests for truth-telling and informed refusal, spiritual support, staff education and debriefing to

minimize the impact of family interactions on staff health, family presence at both rounds and resuscitation, way-finding, family friendly signage and family support before, during, and after death [18]. Patient friendly ICUs try to create and sustain a culture of family engagement and empowerment in the ICU. There are few ICUs now those offer bereavement services after death of a patient in ICU.

There should be efforts to make the organizational structure of ICUs (and hospitals) homogeneous during weekdays and weekends. Hospitals are increasingly adopting 24-hour intensivists physician staffing as a strategy to improve intensive care unit (ICU) outcomes. There should be a guarantee for the appropriate timeliness of tests and therapies during weekends as well.

For clinicians and nurses, four 'C's are of prime importance i.e. competency, compassion, consistency and concern. That will make any clinician or nurse really patient friendly as well as patient caring.

Everyday, Remember why you are there! The patients and their relatives entrust us with their lives, so let's not let them down. Let's pledge to make our ICU patient-friendly with healing touch and environment

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