9.6. Humanisation in intensive care units

Introduction

In the past 30 years, there have been spectacular scientific and technological developments in Intensive Care Units (ICUs). This has been the cause of a notable increase in survival rates for patients admitted to these units. In Spain, the Spanish Society of Critical and Intensive Medicine and Coronary Care Units (SEMICYUC (acronym in Spanish)) has estimated the survival rate at over 90%. The standard of training, and the performance, of healthcare professionals dedicated to the critically ill patient, is excellent.

Having said this, the intensive use of technology has meant that the human and emotional needs of patients, families and professionals have been pushed into the background. As a consequence, we observe a loss of narrative in the elaboration of clinical histories, failure to listen actively to patient and family demands, and the questioning of healthcare as a profession for reasons of stress. This stress originates from the lack of stable working conditions caused by cuts in both human and material resources, which are partly due to the economic crisis and partly to lack of social recognition. It is time, therefore, to reflect upon whether it is necessary to bring about a re-humanisation of medical care and improve the relationship between patients, relatives and healthcare professionals.

The term “humanise” could be seen as controversial. Many people may be surprised that such an intrinsic aspect of the healthcare profession should be the object of debate. We do not intend to call into question the level of humanity shown by professionals. The real objective is to achieve greater closeness, understanding, emotional awareness and affection, increasing our ability to self-criticise and persevering in our constant desire to improve. The recovery of the commitment to service and delivery, which originally fuelled our aspiration to be part of the healthcare profession, constitutes both a challenge and a necessity of great magnitude and general concern. The act of humanising takes places from the inside outwards. It is an important personal commitment to improve daily life, our relationships, and our personal environment. To stop and think, and see what each person can contribute to the system, is to convert the process of change into one where action is fundamentally important. Our health system will be able to consider itself humanised when it places itself at the service of all those who compose it: patients, relatives and healthcare professionals at all levels.

Integrated care requires subjectivity, sensitivity and ethics. It needs large measures of communication and people skills: active listening, respect, empathy and compassion, a basic toolkit that, to a greater or lesser degree, did not feature on the curriculum of current professionals. These teaching resources are essential to promote and improve training in humanisation. Conscious of this idea, the Region of Madrid’s own Intensive Medicine Services (SMI (acronym in Spanish)) has introduced initiatives for making visiting hours more flexible, measures to improve wellbeing for patients and families, research into levels of satisfaction and protocols to ensure the appropriateness of end-of-life care.

In addition, the Ministry of Health has prioritised the humanisation of care in the Region of Madrid as one of the strategic approaches for the current term in office.

In September 2015, a Technical Committee was created, made up of healthcare professionals (intensive care doctors, nurses, paediatricians, physiotherapists) who are committed to humanisation activities, including representatives from the Society of Intensive Medicine of the Region of Madrid (SOMIAMA (acronym in Spanish)), as well as patients and independent experts. The Committee was formed with the objective of elaborating a project directed towards the “humanisation of intensive care” and with the goal of offering a methodology for ICUs in the Region of Madrid to be able to strive for a level of excellence in healthcare that is humanised and people-focused, making these units into more pleasant places for patients, relatives and professionals. The Committee is backed by independent experts, members of the international research project HU-CI, and has the technical support of the General Management of Coordination of Citizen Care and Humanisation of Healthcare and of Planning, Research and Training, which is part of the Ministry of Health.

The Committee established eight strategic approaches to work on. Each approach was taken on by a working group made up of Committee members with the help of any independent experts thought necessary by each commission.

The documents elaborated by the commissions were debated and agreed upon in working meetings by the Technical Group in order to draw up a first version of the document. This version was subsequently discussed with representatives from all strata of ICUs in Madrid, in order to create a proposal of prioritisation and implementation of measures, in conjunction with the Ministry of Health. The following programmes and areas of intervention were prioritised:

1. Open-door policy in ICUs
2. Communication
3. Wellbeing of the patient
4. Presence and participation of relatives in intensive care
5. Care for the healthcare professional
6. Prevention, management and monitoring of post-intensive care syndrome
7. Humanised infrastructure
8. End-of-life care

Programme 1: Open-door policy in ICUs

Justification

Historically, the policy on family members visiting patients admitted to Intensive Medicine Services (SMI (acronym in Spanish) or to ICUs has followed a restrictive model. It was considered that such an approach worked in the best interest of patient care during his/her illness, while at the same time facilitating work carried out by healthcare professionals.

There is now sufficient evidence to argue for and promote a change in this policy. The experience of paediatric and neonatal ICUs (PICUs and NICUs respectively), where parents and regular caregivers are considered fundamental to patient care, justifies a critical lens on this topic. It is known that the introduction of flexible hours or the establishment of an "open-doors" policy in critical care units (Annexe 1) generates benefits for patients, relatives and professionals.

The barriers to introducing more flexible hours stem from deeply rooted customs across all strata and a lack of critical reflection on the shortcomings of these customs. The solution must come from awareness and the creation of new attitudes and habits, based on the successful experiences of other Units, that allow a liberalist modification of visiting policies. This change must be adapted to the idiosyncrasies of each Unit.

Objectives

General Objective

⇨ Develop strategies to make visiting hours more flexible in SMIs

Specific Objectives

1. Make professionals aware of the benefits for patients, family members, professionals and SMIs of implementing the ICU open-door policy.
2. Facilitate ICUs' accessibility to relatives of patients
3. Promote contact and relationships between patients and their families during their stay in ICU.

ACTIVITIES AND EVALUATION

ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Specific objective 1: Make professionals aware of the benefits for patients, relatives, professionals and SMIs of implementing the ICU open-doors policy					
Knowledge-sharing within each SMI and among their professionals of the experience of other Units where the "ICU open-door policy has been implemented	SMI training plan	Completion of knowledge-sharing activity based on experiences of the ICU open-door policy	At least 1 activity	Yearly	SMI Service Chief/ SMI professional responsible for this approach
	Individual record	% of ICU professionals to have received the information	--		
Information/working sessions with SMI professionals to analyse barriers and solutions to the implementation of the model	SMI training plan	Completion of the working session to analyse the issue	At least 1 session	Yearly	Person responsible for Continuing Education in the SMI/SMI professional responsible for this approach
	Individual record	% of ICU professionals who attended the sessions	--		
Specific objective 2: Facilitate ICUs' accessibility to patients' relatives					
Elaboration of an appropriate healthcare protocol of flexible hours or open doors for each centre. To be considered in the protocol are: - The need to value the opinion of healthcare professionals about the advantages and drawbacks related to increasing visiting hours and to the presence of family members during techniques and procedures. - The completion of training activities for healthcare staff where the beneficial effects of the change are made known - A document will be written outlining the consensus reached regarding policy on visiting and accompaniment	Specific document	Production of a document	Yes	Yearly	SMI Service Chief/ SMI professional responsible for this approach
		% of ICUs who have drawn up an open-doors healthcare protocol	>70-80% at the end of 2019		General Management of Healthcare Coordination/ Hospital Management

Specific objective 3: Promote contact between patients and their families during their stay in ICU					
Removal of unnecessary barriers (footwear, gowns, gloves and masks) except in special cases where these are required	SMI working plan	Systematic non-use of footwear, gloves, gowns and masks	No (excludes special cases where they are required: individual discretion needed)	Yearly	SMI professional responsible for this approach/ Nursing Supervisor

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Justification

Programme 2: Communication

Communication is the key element in human relationships and implies not only the exchange of information but also the enrichment of those involved. In healthcare, despite advancements in new technologies that appear to replace human intervention, it is necessary to encourage and improve effective communication among all participants: professionals, patients and families.

In SMIs, teamwork among different professionals is indispensable and requires, among other elements, effective (complete, clear, timely, concise) communication in order to avoid errors and create a consensus in terms of treatment and patient care. Times of information transfer in ICUs (shift changes, guard changes, relocation of patients to other units or services etc.), where it is not only information but also responsibility that is exchanged, are frequent and crucial, since it is at these times that relevant information risks being omitted or misinterpreted.

On the other hand, conflicts among the professionals who make up ICUs are frequent and are on many occasions caused by ineffective communication. These conflicts threaten the concept of teamwork, have a direct influence on the wellbeing of the patient and his/her family, create fatigue and professional disillusionment, and generate greater waste of healthcare budgets.

Healthcare information is one of the principal needs expressed by patients and family members in ICUs, and its absence or ineffective provision underlies many of the complaints filed. Although the patient holds legal right to the information, for critical patients who do not have legal capacity, this right transfers to the relatives. Giving adequate information in such times of great emotional strain requires strong communication skills, for which the majority of professionals have not received specific training. The right communication with patients and family members will help to create a climate of trust and respect, and promote joint decision-making.

Although general models do exist, specific policies on how to carry out the informative process in the ICU have not been defined. In our country these policies are rigid: 80% of units give out information once per day and information is given at the request of families in only 5% of units. Information-sharing among doctors and nurses is also exceptionally low (3,1%). It is important to point out that nurse participation in information-sharing is, in general, insufficient and poorly defined, despite the fundamental role that nurses carry out in critical patient care and that of their families.

Of all the events that take place in the ICU, one of those perceived to be most stressful by patients is the inability to speak, which causes them to experience panic, insecurity, sleep disruptions and elevated levels of stress. Many of the patients who pass away in the ICU do so without being able to communicate their needs and wants at the end of their life, or give messages to their loved ones. This means it is paramount that attempts to communicate with patients who have limited communication capacity are improved, promoting the use of augmentative communication systems (which complement oral language when it is not sufficient for effective communication).

Objectives

General Objective

⇨ Encourage and improve effective communication between professionals, patients and families of the SMIs

Specific Objectives

1. Develop tools that ensure the correct transfer of relevant information on a patient among all team members and that improve teamwork.
2. Facilitate aspects that help to establish appropriate and empathetic communication with relatives on behalf of all team members, in order to reach a satisfactorily helpful relationship, as well as to facilitate accessibility of information.
3. Facilitate the giving out of information to patients and promote the use of augmentative and/or alternative communication systems where necessary.

ACTIVITIES AND EVALUATION

ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Specific objective 1: Develop tools that ensure the correct transfer of relevant information on a patient among all team members, and that improve teamwork					
Implementation of a structured protocol for information transfer during shift changes/ guard changes/ discharge	Specific document	Existence of a protocol for information transfer	Yes	Yearly	SMI Service Chief/ Nursing supervisor
	Specific record	No. of regulated incidences of information transfer that adhere to the protocol/No od routine information transfers per year	SEMICYUC indicator (90%)		
Completion of daily ward-rounds by multidisciplinary teams	SMI working plan. Specific record	No. of days on which multidisciplinary ward-rounds take place per 365 days/year	SEMICYUC indicator (80%)	Yearly	Service chief/ Nursing supervisor
Incorporation of specific tools to improve effective communication: daily goals/checklists/AASTRE (Random Security Analysis in Real Time)/ SBAR tool	SIM working plan	Existence of specific tools to improve effective communication	At least 1 per year	Yearly	Service chief/ Nursing supervisor
Completion of training activities for ICU professionals in team building and effective communication (CRM, clinical simulation)	Continuing education activity record	Completion of training activities	At least one session	Yearly	Hospital management/ Person responsible for continuing education
		% if ICU professionals to have completed at least 1 training activity	>80% at end of 2019		
Specific objective 2: Facilitate aspects that help establish appropriate and empathetic communication with relatives on behalf of all team members, in order to reach a satisfactorily helpful relationship, and facilitate accessibility of information					
Existence of appropriate and sufficient spaces for providing information to fmailies	Hospital management memorandum	Existence of appropriate and sufficient spaces for providing information to families	Yes	--	Hospital management/ Director
Implementation of doctor-nurse group information sharing process to patients and relatives	Specific document/ SMI working plan	Existence of a written procedure	Yes	Yearly	Service chief/ Nursing supervisor
	Specific record	No. of incidences of doctor-nurse group information sharing/365 days/Year	SEMICYUC indicator		

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Completion of training activities in communication techniques and giving bad news/ simulation workshops	Continuing education activity record	Completion of activity training	At least 1/Year	Yearly	Hospital management/ Person responsible for continuing education
		% of professionals to have completed at least 1 training activity	>80% at end of 2019		
Consideration of different strategies: making hours more flexible, increasing frequency of information sharing, phone calls in select cases	SMI working plan	Completion of activities that promote information sharing to relatives according to the unit's protocol	At least 1/Year	Yearly	Service chief
Specific objective 3: Facilitate the giving out of information to patients and promote the use of augmentative and/or alternative communication systems where necessary					
Availability of augmentative/alternative non-verbal communication systems (alphabetic charts, singing codes, images or structured questions with yes/no answers), with the potential to include new technologies such as communication by eye contact	Hospital management memorandum	Augmentative/alternative communication systems are available	At least one	Yearly	Hospital management/ Director
	Specific document	There exists a procedure for communication with patients with language difficulties	Yes		Service Chief/ Professional responsible for this approach
	Specific record	No. of patients with language difficulties with whom CAA systems have been used/ No. of patients with language difficulties/Year	Yes		

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Service Chief

Programme 3: Patient wellbeing

Justification

The goal of attending to a patient's wellbeing should nowadays be as crucial as attending to his/her treatment, and is even more important when the latter is not possible.

Illness itself is upsetting and painful for patients, and on top of this even further upset is caused by the interventions that we carry out on them, which are often painful: procedures, implantation of devices, immobility, etc. As well as physical pain, we can neither ignore nor underestimate the psychological suffering. Any illness brings about uncertainty, fear, anxiety…, which can bring about more suffering that the physical pain itself.

All these aspects increase considerably in magnitude among critical patients who require admission to ICU. In ICUs it is probable that the psychological element of their suffering becomes more acute, since there are additional disturbing aspects for the patient such as loneliness on being separated from family members; vulnerability; the dependency, in many cases, on life support machines; total loss of autonomy and mobility; the inability, on occasions, to communicate in any great quantity; loss of identity; lack of communication on what is happening to him/her, and on his/her diagnosis, etc.

The work conditions in our ICUs are often not conducive to managing of these aspects optimally, although significant steps have been made to tackle the issue in recent years. Pain assessment and control, dynamic sedation appropriate to the patient's condition and the prevention and management of acute delirium are key elements to improving patients' comfort, as well as attention to other upsetting physical factors such as lack of sleep at night, noise, thirst, cold and heat.

The relief of psychological unease probably requires a change in work methods on behalf of ICU professionals, which is being implemented in a number of units. This change must avoid the assumption that admittance to ICU means separating from family members and from the patient's life in the outside world, and must strive to maintain the patient's autonomy as much as possible and his/her dignity at all times.

Objectives

General objective

⇨ Improve and guarantee patient comfort, not only in the physical, but also the psychological, spiritual and environmental, sense

Specific Objectives

1. Promote measures that avoid or diminish physical discomfort and that favour early recovery of motor function. This includes: pain control, dynamic sedation adjustment, delirium prevention and relief of other painful or bothersome sensations. *(See Annexe II).*
2. Promote actions that lead to reduction in psychological suffering of the patients and attend to spiritual demands.
3. Establish measures that promote patient autonomy and facilitate his/her connection with the outside world
4. Promote measures that facilitate waking-sleeping rhythms and nighttime rest, as well as other environmental wellbeing measures.

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Specific Objective 1: Physical comfort: Promote measure that avoid or diminish physical discomfort and that favour early recovery of motor function					
Implementation and/or updating of the Analgesia and Sedation Protocol, with monitoring and evaluation of sedation and analgesia.	Specific document	Existence of an up-to-date protocol for sedation and analgesia	Yes	--	Service chief/ Professional responsible for this field
	Hospital management memorandum	%of ICUs with up-to-date protocols for sedation and analgesia	≥80-90%	At end of 2019	General Director of Healthcare Coordination/ Hospital Management
	Specific register (in graph form)	Monitoring of sedation and analgesia (SEMI- CYUC indicators) (1) (2) (3)	Yes	1 Year	Nursing Supervisor
	Hospital management memorandum	%of ICUs with records of scales of pain and delirium	≥95%	At end of 2019	General Director of Healthcare Coordination/ Hospital Management
	Specific register (in graph form)	UCIP:Monitoring of pediatric patients' pain at time of admission and periodically (4)	≥95%	1 Year	Nursing Supervisor

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAN-DARD	REGUL-ARITY	RESPONSIBILITY
Implementation and/or updating of the protocol for prevention and management of acute delirium	Specific document	Existence of a protocol	Yes	--	Service chief/ Professional responsible for this field
	Hospital management memorandum	% of ICU with a protocol for the prevention and management of acute delirium	≥50%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
	Clinical history	Identification of delirium (SEMICYUC indicator) (6)	≥ 95%	Yearly	Service chief/ Professional responsible for this field
Implementation and/or updating of protocol for mechanical restraints	Specific document	Existence of a protocol for mechanical restraints	Yes	--	Service Chief/ Nursing Supervisor
	Hospital management memorandum	% of ICUS to have implemented a protocol for mechanical restraints	≥50%	At end of 2019	General Director of Healthcare Coordination/ Hospital Management
	Specific records	Monitoring of the use of containment measures (SEMICYUC indicator) (7)	≥95%	Yearly	Nursing Supervisor
Implementation of early physiotherapy for critical patients (motor and/or respiratory), linked to early mobilisation and sitting and controlled posture changes	Clinical history	Completion of early physiotherapy among patients indicated (within first 48 hrs of admission)	≥80%	Yearly	Professional responsible for this approach
	Hospital management memorandum	Existence of a physiotherapist assigned to the SMI (shared with other services)	Yes	--	General director of Healthcare Coordination/ Hospital Management
		% of ICU to have been assigned a physiotherapist (shared with other services)	≥60%	At end of 2019	
Systematic assessment of sensations of discomfort in the patient (thirst, cold, heat, etc.) and relief of these as far as possible	Clinical history	Systematic assessment of sensations of discomfort in the patient	≥80%	Yearly	Service chief/ Nursing Supervisor
Evaluation at time of admission and periodically of pain in paediatric patients	Clinical history	Pain assessment in the paediatric patient	100%	Yearly	Service Chief/Nursing Supervisor
Specific objective 2: Psychological and spiritual comfort: Promote actions that lead to reduction in the patient's psychological suffering and attend to spiritual demands					
Facilitate means of entertainment for patients with the necessary regulation of use (reading, multimedia devices, radio, TV, etc.)	Specific document	Protocol for use and regulation of means of entertainment	Yes	--	Service chief/ Professional responsible for this field
	Hospital management memorandum	% of ICUs with regulation and promotion of means of entertainment	≥50%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Favour spiritual/religious attention or care if the patient or family members request it	Hospital management memorandum	Spiritual/religious attention available at the request of patients or family members	100%	One year	General director of Healthcare Coordination/ Hospital Management

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONS-IBILITY
Specific objective 3: Patient autonomy: Establish measures that promote patient autonomy and facilitate his/her connection to the outside world					
Promotion of supervised walks and use of the WC in select cases	Clinical history	% of patients permitted to walk around in relation to the no. of patients who would be clinically able to do so	≥50%	At end of 2019	Service chief/ Supervisory nurse
Regulation of the use of mobile phones (promote contact with family members and reduce sense of isolation)	Specific document	Protocol for the use and regulation of mobile phones for patients	Yes	--	Service chief/ Professional responsible for this field
	Hospital management memorandum	% of ICUs with regulation of mobile phones	70-80%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Specific objective 4: Environmental comfort: Promote measures that facilitate waking-sleeping rhythms and night-time rest, as well as other environmental wellbeing measures					
Control of surrounding noise levels: maintain an environment with the least noise possible to improve the comfort and the recovery of patients, and reduce delirium and posttraumatic stress: - Measuring of noise levels: fitting of decibel meters in all units with warning lights when the established limits are exceeded - Adjustment of alarm, telephone and/or intercom tones during the night	Hospital management memorandum	Installation of devices to measure noise intensity	Yes	--	Service chief/ Nursing Supervisor
		% of ICUs to have installed devices to measure noise intensity	≥50%	At end of 2019	Supplies department
Lighting control: - Adjustment of night-time lighting, with the possibility of reducing general light intensity at night in communal areas and individualise it in each bay - Favour natural light during the day (bays with natural light)	Hospital management memorandum	Existence of mechanisms to control lighting levels individually	Yes	--	General director of Healthcare Coordination/ Hospital Management
		% of ICUs with mechanisms to control lighting levels individually in bays and communal areas	≥50%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Reduction of activities or interventions performed on patients during resting periods	Specific document	Protocol for reduction of activities or interventions performed on patients during resting periods	Yes	--	Service chief/ Nursing Supervisor
Promotion of music therapy: beneficial effect of music on critical patients, reducing anxiety and physiological response, with reduction in heart and breathing rates and systolic arterial tension. Relaxing music is recommended	Hospital management memorandum	Implementation of music therapy	Yes	--	Service chief/ Nursing Supervisor/ Supplies department
		% of ICUs to have implemented music therapy	≥50%	At end of 2019	General director of Healthcare Coordination/ Hospital Management

SEMICYUC AND OTHER INDICATORS		
INDICATOR	FORMULA	STAND-ARD
(1) **Appropriate sedation** (result) maintenance of successive results of scales of sedation at minimum 80% within the prescribed range for this patient	No. of patients with mechanical ventilation (MV) and appropriate sedation x 100 / No. of patients with MV and sedation in the SMI	85%
(2) **Monitoring of sedation** (process) evaluation of level of sedation using one of the valid scales every 6h, or if there is a variation in clinical state	No of periods of 6 hours with monitored sedation x 100 / No of periods of 6 hours with MV and continuous sedation (days of MV and continuous sedation x 4)	90%
(3) **Management of analgesia in the un-sedated patient** (process) Monitoring according to protocol: at least one measurement must be taken every four hours (or more frequently where pain is involved), respecting sleep using a valid pain scale (E.g. Visual Analogue Scale VAS, Verbal Numerical Rating Scale VNRS). It will not be permitted to perform more than 3 VAS or VNRS measures per 24 hours	No. of patients monitored according to protocol x 100 / No. of patients eligible for analgesia, without sedation	100%
(4) **Pain evaluation for patients on admission to ICU** Includes: all ICU patients < 18 years of age	No. of patients whose pain is evaluated at time of admission to ICU x 100 / Total ICU admissions	
(5) **Periodic pain evaluation for ICU patients**	No. of patients whose pain is evaluated minimum every 6 hours x 100 / Total number of ICU patients	
(6) **Identification of delirium** (process) Daily assessment using the Confusion Assessment Method-ICU (CAM-ICU) or Intensive Care Delirium Screening Checklist (ICDSC)	No. of patients with MV and assessment of the presence of delirium x 100 / No. of patients with MV for more than 48 hours	90%
(7) **Use of containment measures** (process): The prescription can only be made by physicians, though may be initiated by nurses. The protocol must consider: 1. Definition and types of containment. 2. Indication of situation in which containment should be used. 3. Tracking of patients put in containment: when and where. 4. Documentation in the clinical history	No. of containments adjusted to the protocol x 100 / No. of containments carried out	100%

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Programme 4: Presence and participation of relatives in intensive care

Justification

70% of relatives of patients admitted to ICU show signs of anxiety and up to 35% show signs of depression, on top of situations of stress in the acute traumatic moment and posttraumatic period.

Family members wish to participate in caring for the patient. If clinical conditions permit, relatives who are willing to do so might collaborate in certain aspects (personal hygiene, administering food or rehabilitation), always under the training and supervision of the healthcare professionals. Giving the family the opportunity to contribute to the patient's recovery can have positive effects on the patient, on the relatives and on the professional, by reducing emotional stress and facilitating closeness and communication among the parties involved.

Recommendations exist concerning how to integrate family participation into patient care. It involves the implementation of the patient-family unit and its management on a universal scale.

The development of research concerning family presence during procedures in SMIs began in the 1980s. In general, intensive care professionals do not consider the presence of family members during procedures to be appropriate, referring to the possibility of causing psychological trauma and anxiety to the family, the interference in the procedures, the distraction involved and the possible impact on the healthcare team. On the other hand, surveys show that the majority of patients and family members would like to remain with their loved ones during these moments. Although the studies are not conclusive, the presence of family members has not been linked to negative consequences. It is, however, accompanied by changes in attitude such as a greater concern for professionals on matters of privacy, dignity and pain management during procedures where family members are present, as well as greater satisfaction of family members and a greater degree of acceptance of the situation regarding the mourning process.

Objectives

General Objective

⇨ Integrate families into the patient care process in ICUs

Specific Objectives

1. Offer the family the opportunity to participate in the basic care of the patient and in certain prodcures
2. Detect and support the emotional and psychological needs of the families

ACTIVITIES AND EVALUATION

ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Specific objective 1: Offer the family the opportunity to participate in the basic care of the patient and in certain prodcures					
Elaboration of a procedure that considers family participation in the patient's basic care (hygiene, food, rehabilitation)	Specific document	Existence of a questionnaire for interviewing family members of long-stay patients (> 7 days) that records needs and generates action plan (check list)	Yes	--	Service chief/ Nursing supervisor
	Hospital management memorandum	% of ICUs to have elaborated an interview questionnaire	70-80%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Creation of the role of primary carer for long-stay patients (Annexe III)	SMI working plan	Existence of primary carer(s)	Yes	--	Service chief/ Nursing supervisor
	Hospital management memorandum	% of ICUs with a primary carer	70-80%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Training for family members (School for ICU Families-Annexe IV)	Specific document	Existence of a protocol on the creation of a School for Families	Yes	--	Service chief/ Supervisory nurse
	Hospital management memorandum	% of ICUs to have a School for Families	70-80%	At end of 2019	General director of Healthcare Coordination/ Hospital Management

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGULA RITY	RESPONSIBILITY
Implementation of instruments (questionnaire) for offering family members the opportunity to accompany patients for certain procedures	Specific document	Questionnaire for the possibility of accompanying on procedures	Yes	--	Nursing supervisor
	Specific record	No. of patients whose families were given the questionnaire per no of patients admitted to ICU/year	--	Yearly	
Specific objective 2: Detect and supprt the emotional and psychological needs of the families					
Use of tools to identify the emotional and psychological needs of the carers	Specific record	No. of carers to whom tools have been applied to identify emotional and psychological needs per no. of carers	--	Yearly	Psychologist
Regulation of the use of mobile phones (promote contact with family members and reduce sense of isolation)	Specific document	Existence of protocols for support for carers	Yes		Psychologist
	Hospital management memorandum	% of ICUs to have a protocol for support for carers	>95%	At end of 2019	General director of Healthcare Coordination/ Hospital Management
Availability of psychological support	Hospital management memorandum	Existence of psychological support in the ICU	Yes	--	General director of Healthcare Coordination/ Hospital Management
		% of ICUs with psychological support	>50%	At end of 2019	
Control of surrounding noise levels: maintain an environment with the least noise possible to improve the comfort and the recovery of patients, and reduce delirium and posttraumatic stress: - Measuring of noise levels: fitting of decibel meters in all units with warning lights when the established limits are exceeded Adjustment of alarm, telephone and/or intercom tones during the night	Hospital management memorandum	Installation of devices that measure noise intensity	Yes	--	Service chief/ Nursing supervisor
		% of ICUs to have devices that measure noise intensity installed	≥50%	At end of 2019	Supplies department

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Programme 5: Care for the Healthcare Professional

Justification

As healthcare professionals we experience our work from a profoundly vocational perspective. Our daily commitment to the service and helping of the sick patient requires a great deal of dedication and involvement, which provides enormous personal satisfaction when expectations are fulfilled, quality work is carried out, patients are cured, suffering is avoided, we enjoy well-deserved recognition, etc. When things do not go well, however, the emotional toll is considerable. When this emotional toll goes hand in hand with a neglect of our own health and wellbeing, the "Burnout Syndrome", or nervous breakdown, occurs.

There is general agreement that burnout syndrome is a response to chronic stress at work. It has negative connotations linked to the negative consequences it implies for the individual and the organisation. Among its many conceptualisations, one of those most widely used has been that of Maslach and Jackson which characterises the syndrome by emotional exhaustion or loss of emotional resources needed to deal with one's work; depersonalisation or the development of negative attitudes, or insensitivity and cynicism towards those receiving the service; and lack of personal achievement or tendency to evaluate one's own work in a negative way, with feelings and impressions of low professional self-esteem.

The consequences of the syndrome are broad and important and affect mental health, physical health, quality of life and the effectiveness of the healthcare professional. This situation presents the need to develop prevention and intervention programmes that help to control and alleviate these effects.

There are no studies of any magnitude in the field of intensive care that help us to adequately map the incidence and consequences of the syndrome.

Society and organisations have the moral duty, the ethical imperative and the legal obligation to "care for their carers", who are exposed to significant physical, emotional and psychological burdens stemming from their effort and dedication. To fulfil this obligation, a series of basic objectives and priorities must be defined that direct us towards the execution of preventative and therapeutic interventions.

Objectives

General objective

⇨ Map the impact of professional burnout syndrome in SMIs, encourage its detection and reduce the negative consequences on healthcare professionals, on patients, and on their institutions.

Specific objectives

1. Improve knowledge on professional burnout syndrome and work to make it more visible
2. Evaluate the impact of professional burnout syndrome in SMIs
3. Analyse the factors related to professional burnout syndrome, such as job satisfaction, anxiety, depression and engagement in the work.
4. Reduce professional burnout syndrome and improve the degree of job satisfaction

ACTIVITIES AND EVALUATION

ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGU-LARITY	RESPONSIBILITY
Specific objective 1: Improve knowledge on professional burnout syndrome and work to make it more visible					
Completion of specific training on professional burnout syndrome	Training activity record	At least 1/year: group 1 hospitals. At least 2/year: group 2 hospitals At least 3/year: group 3 hospitals	Yearly	Yearly	Hospital management/ Person responsible for continuing education
		No. of SMI professionals who complete at least 1 training activity on professional burnout per no. of SMI professionals	>80% at end of 2019		
Printing of a manual on professional burnout in intensive care	Specific document	Elaboration of manual on professional burnout	Yes	Periodic revision	Hospital management/ Humanisation ICU ad hoc group
Elaboration of a manifesto or declaration for the communities involved where the importance of caring for the healthcare professional is recognised	Specific document	Elaboration of the manifesto and its diffusion	Yes	--	Humanisation ICU working group

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Specific objective 2: Evaluate the impact of professional burnout syndrome in SMIs					
Completion of a multicentre study on the prevalence of professional burnout syndrome, its precursors, the consequences for health and quality of life, and the resources that ICU professionals have available to cope with the condition. To this end a survey will be designed, in which questionnaires can be used on an *ad hoc* basis	SEMICYUC/CEEIUC multicentre study	Completion of the multicentre study	Yes	Twice Yearly	*Ad hoc* Humanisation-ICU group
Specific objective 3: Analyse the factors related to professional burnout syndrome, such as job satisfaction, anxiety, depression and engagement in the work					
Completion of a multicentre study to know the degree of job satisfaction, anxiety, depression and engagement in the work	Multicentre study	Completion of the multicentre study. Index of job satisfaction. % of depression % of anxiety	Yes	At least one yearly observa-tion	*Ad hoc* Humanisation-ICU group
Specific objective 4: Reduce professional burnout syndrome and improve the degree of job satisfaction					
Implementation of specific institutional strategies of support for professionals	Hospital manag-ement memora-ndum	No of ICUs with a programme implemented for the prevention, detection and treatment of professional burnout per total number of ICUs	>50%	At end of 2019	General director of healthcare coordination/ Hospital management
Designing of a training programme which deals with different aspects related to professional burnout in order to acquire competences and skills for dealing with stress and conflictive situations (resilience, positive personality, assertiveness, problem solving, effective time management)	Training activity record	No of ICUs that have included in their continuing education programme the completion of a course that deals with different aspects related to professional burnout	>80%	At end of 2019	Hospital management/ Person responsible for continuing education
Designing of a training programme that deals with different aspects related to professional burnout in order to acquire competences and skills for dealing with stress and conflictive situations (resilience, positive personality, assertiveness, problem solving, effective time management). Explore organisational changes that reduce the impact of professional burnout: Reordering of the job, new forms of organisation with a reduction in days on call, less healthcare workload (more work related to teaching, training and research), rotation of job position, improvement of professional abilities. Increase in the degree of participation and opinion of professionals in the cultural management of the organisation, in its general management and its objectives. Measures to improve the institution's work environment with the direct participation of professionals: architectural designs, steps to improve ergonomics, areas optimised for rest and work, meeting rooms. Reduction in healthcare workloads for senior personnel, in tandem with increasing their teaching, training, organisation, management, coordination, integration and research responsibilities, with the support of junior personnel	Specific record	Creation of a platform for dialogue between SOMIAMA and the CM where aspects related to professional burnout can be dealt with	At least 1 meetin g per year	Yearl y	General director of healthcare
Periodic evaluation of burnout syndrome in every SMI	Evaluatio n report	% of professionals with burnout syndrome compared to previous measurement No of ICU professionals with professional burnout syndrome per total no of ICU professionals	2018< 2016	Year or twice yearl y	Hospital management/ Service chief

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Programme 6: Prevention, management and monitoring of post-intensive care syndrome

Justification

The traditional goal of Intensive Medicine has been to reduce mortality in the short term without special consideration for extra-ICU factors once the patient is discharged from the SMI.

Currently – and within the concept of the "expanded" ICU – we present other questions:

- What does it mean to survive an SMI for patients and their families?
- The patients who survive: do they recover well in the long term or do they present with pathologies derived from their critical situation?
- Can our intra-ICU attitude change if we understand better our patients' recovery process post-discharge?

Post-Intensive Care Syndrome (PICS) is a concept defined only recently that affects no small number of patients (30 to 50%), and also affects family members. It involves a broad group of health problems that remain after the critical illness.

These problems begin to emerge when the patient is in ICU and they can persist after he/she has returned home. More than 50% of patients return to work during the first year, but many are not able to do so and need help with their daily activities after having been discharged.

Physical symptoms (such as persistent pain, weakness acquired in ICU, malnutrition, pressure ulcers, sleep alterations, the need to use devices), Neuropsychological symptoms (cognitive impairments, such as alterations in memory, attention, speed of mental processing) or emotional problems (appearance of mental problems such as anxiety, depression or post-traumatic stress) can all arise. These problems also affect the patients' families, since they can cause social problems.

In fact, families are fundamental in minimising PICS by participating in the patient's care, helping him/her to remain focused and reducing stress for both parties.

Critical illness produces a family crisis, and these feelings of worry (decision-making, the evolution of the illness) and confusion can lead family members to neglect their own health. For this reason, the healthcare team should also support the relevant family members.

And the management of PICS requires a multidisciplinary team aside from ICU professionals: specialists in rehabilitation and physiotherapy, nurses, psychologists, psychiatrists, occupational therapists, speech therapists, all of whom should be coordinated and in close relationship with each other, with important attention to ensure continued assistance in the ICU, the conventional hospital bed, and the home.

Objectives

General objectives

- Generate general knowledge and understanding of the importance of PICS
- Implement the corresponding interventions for its prevention, detection and management

Specific objectives

1. Prevent and detect the appearance of PICS early.
2. Improve the quality of life of patients identified to be pre-discharge from the SMI while they are being monitored on the ward and/or when they are discharged and sent home.
3. Assess and implement possible organisational measures appropriate to the situation in each hospital.

ACTIVITIES AND EVALUATION

ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Specific objective 1: Prevent and detect the appearance of PCIS early					
Application of the ABCDEF package of measures during stay in the ICU	Clinical history	% of long-stay patients (>7d) to whom the ABCDEF package of measures has been applied	>95%	Yearly	Team responsible for each patient's treatment
	Hospital management memorandum	% of ICUs where the ABCDEF package of measures has been applied	50%	End of 2019	General director of healthcare coordination/ Hospital management
Elaboration of a ICU without Delirium Protocol (Annexe VI)	Specific document	Elaboration of an ICU without Delirium Protocol	Yes	--	
	Hospital management memorandum	% of ICUs with an ICU without Delirium Protocol	50%	End of 2019	General director of healthcare coordination/ Hospital management

Implementation of prevention and treatment measures of neuromuscular disease: reduction of the duration of mechanical ventilation, deep sedation and neuromuscular blocking; use of anti-varus orthotics and early movement (See programme 3: Wellbeing of the patient	Specific document	Elaboration of a protocol to prevent and treat neuromuscular disease	Yes	--	Service chief and Nursing supervisor
	Hospital management memorandum	% of ICUs with a protocol to prevent and treat neuromuscular disease	>95%	End of 2019	General director of healthcare coordination/ Hospital management
Specific objective 2: Improve the quality of life of patients identified to be pre-discharge from the SMI while they are being monitored on the ward and/or when they are discharged and sent home.					
Completion of a physical and psychological functional assessment	Hospital management memorandum	Existence of a rehabilitation team dedicated to the SMI, and a psychologist	Yes	--	General director of healthcare coordination/ Hospital management
		% of ICUs with a rehabilitation team	60%	At end of 2019	
		% of ICUs with psychologists dedicated to the SMI	50%	At end of 2019	
Make protocols for specific conduct in monitoring these critical patients during their stay on the ward	Specific document	Creation and application of a checklist for monitoring on the ward	Yes	--	Team responsible for each patient's treatment
	Hospital management memorandum	% of ICU with said checklist	>70%	End of 2019	General director of healthcare coordination/ Hospital management
Specific objective 3: Assess and implement possible organisational measures appropriate to the situation in each hospital					
Creation of a specific follow-up consultation once they have been discharged (Annexe VII)	Clinical history	% of patients with PICS checked two months after discharge	>75%	Yearly	Service chief or professional responsible for this approach
	Hospital management memorandum	% of ICUs with follow-up consultations	>50%	At end of 2019	General director of healthcare coordination/ Hospital management
Elaboration of a multidisciplinary care plan for the patient with PCIS	Specific document	Existence of a multidisciplinary care plan for the patient with PCIS	Yes	--	Service chief or professional responsible for this approach
	Clinical history	% of patients with PCIS who receive the care plan	>70%	Yearly	Service chief or professional responsible for this approach
	Hospital management memorandum	% of ICUs with care plans	>70%	At end of 2019	General director of healthcare coordination/ Hospital management

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Programme 7: Humanised infrastructure

Justification

According to the Standards and Recommendations of the Ministry of Health, Social Services and Equality, the ICU is defined as "an organization of healthcare professionals that offers multidisciplinary care in a specific space in the hospital, that fulfils a number of functional, structural and organizational requirements, in a manner that guarantees adequate conditions of security, quality and effectiveness to attend to critical patients".

In this way, the physical environment of ICUs must allow the care process to be a healthy one that helps in the improvement of the physical and mental state or patients, professionals and family members. An environment that avoids structural stress and promotes comfort.

There is published evidence on this topic (Evidence Based Design), mainly guides in the United States and Europe, and road maps from some nursing associations. We therefore think that an appropriate design can help reduce medical errors, improve results for patients, such as reduction in average stay, and play a possible role in cost control.

We propose changes in these spaces to make them comfortable and friendly for patients, family members and healthcare personnel. Spaces where technical effectiveness goes hand in hand with quality of care and comfort for all users. Changes that result in their being located appropriately, in their appropriateness to users and workflows, in environmental conditions of lighting, temperature, acoustics, materials and finishing, furniture and decoration. These modifications can have a positive influence on the feelings and sensations of everybody. In short, human spaces for human beings and their families who find themselves in very unique situations. Spaces in harmony with the processes that occur in them, with the maximum possible functionality, keeping in mind all the needs of all the users involved.

Objectives

General objectives

- Promote a structural environment in ICUs that guarantees comfort of patients, families and professionals
- Guarantee the appropriate infrastructure to foster a healthy environment for the improvement of physical and psychological state of patients, family members and professionals.
- Facilitate conversion of physical spaces into human spaces

Specific objectives

1. Ensure the patient's privacy
2. Ensure the patient's environmental comfort
3. Foster communication and focus in the patient
4. Encourage entertainment for the patient
5. Make available spaces in gardens or patios and ensure patient access to them (wheelchairs, beds, etc.)
6. Guarantee the education process for school age patients during their stay in ICU
7. Ensure the comfort and functionality of treatment zones
8. Ensure comfort of staff & in the administration area
9. Ensure comfort in the family and parent areas (PICUs & NICUs)
10. Ensure specific operation in NICUs.

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Specific objective 1: Ensure the patient's privacy					
Installation of folding screens, curtains and other separating devices that allow for privacy. They must all be washable. See Annexe VII (A.1.1.)	Technical memorand-um	Existence of privacy boxes	Yes	--	Hospital management/ Service chief
		% of privacy boxes/ICU	100%	At end of 2019	
Make individual boxes available, preferably with windows and translucent doors. With bed for the mother in the case of NICUs, where possible. See Annexe VIII (A.1.2 and E)	Technical memorand-um	Existence of individual boxes	Yes	--	Hospital management/ Service chief
		% of individual boxes/ICU	60%	At end of 2019	
		Existence of neonatal compartments with bed for the mother	Yes	--	
		% of neonatal boxes with bed for the mother	60%	At end of 2019	
Make available boxes with a bathroom or close to shared bathrooms. Or at least ensure a min. level of privacy for physiological functions that require modesty.	Technical memorand-um	Existence of compartments with private bathrooms or near to shared bathrooms	Yes	--	Hospital management/ Service chief
		% of compartments with private bathroom or near to shared bathrooms/ICU	60%	At end of 2019	
Specific objective 2: Ensure the patient's environmental comfort					
Availability of environmental light that reaches the patient sufficiently in terms of quantity and quality, where possible. Always with option of darkness. See Annexe VIII (A.2.1.)	Technical memorand-um	Existence of boxes with natural light	Yes	--	Hospital management/ Service chief
		% of boxes with natural light/ICU	80%	At end of 2019	
		Existence of boxes without natural light but with adequate lighting	Yes	--	
		% of boxes without natural light but with adequate lighting (blue LED)/ICU	100%	At end of 2019	
Incorporation of appropriate colours for adult patients and pictures for children. Attention must also be paid to ceilings, which are sometimes all the patient sees. See Annexe VIII (A.2.2.)	Technical memorand-um	Existence of boxes painted with natural colours and/or pictures	Yes	--	Hospital management/ Service chief
		% of boxes painted with natural colours and/or pictures/ICU	100%	At end of 2019	
		Existence of paediatric boxes with natural or child-oriented pictures	Yes	--	
		% of paediatric boxes with natural or child-oriented pictures/ICU	>95%	At end of 2019	
Installation of appropriate furniture and its correct distribution, to create a functional space, with optimal circulation, avoiding disturbances and unnecessary obstacles	Technical memorand-um	Existence of boxes with appropriate and ergonomic furniture	Yes	--	Hospital management/ Service chief
		% of boxes with appropriate and ergonomic furniture/ICU	80%	At end of 2019	
Personalisation of boxes to creation a feeling of 'personalisation of the space' with pictures and images that lend quality to the space and allow the individual personalisation of each patient (family photos, drawings by children or relatives, cards with notes from friends and family, pictures of music groups, football teams, etc.) See Annexe VIII (A.2.3)	Technical memorand-um	Existence of personalised boxes	Yes	--	Hospital management/ Service chief
		% of personalised boxes per ICU	80%	At end of 2019	
Autonomous and individualised controls in each box for temperature, humidity and ventilation in accordance with UNE and ISO published rules, where possible. See Annexe VIII (A.5.1.)	Technical memorand-um	Existence of boxes with appropriate temperature control	Yes	--	Hospital management/ Maintenance Service
		% of boxes with thermal controls according to UNE and ISO/ICU rules	>95%	At end of 2019	

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Implementation of a lighting control system, since it is paramount that there be enough quality natural light in all patients' rooms. This must be complemented with artificial light. General lighting in the room is of 100 lux. See Annexe VIII (A.5.2.)	Technical memorand-um	Existence of boxes with lighting control	Yes	--	Hospital management/ Maintenance Service
		% of boxes with lighting controlled by regulators/ICU	80%	At end of 2019	
Control noise levels at below 40db. The WHO advises a noise level of 30 decibels, 35db in the patients' area, and up to 10db more to permit communication. See Annexe VIII (A.5.3.)	Technical memorand-um	Existence of boxes with noise control	Yes	--	Hospital management/ Maintenance Service
		% of boxes with noise control/ICU	50%	At end of 2019	
Specific objective 3: Foster communication and focus in the patient					
Availability of a visual connection with the outside world (window at an appropriate height), in order not to become disoriented and maintain circadian rhythm, where possible	Supplies	Visual connection with the outside	Yes	--	Hospital management/ Maintenance Service
Availability of a calendar and clock visible from the bed	Supplies	Existence of boxes with calendars and clocks	Yes	--	Hospital management/ Nursing supervisor
		% of boxes with calendars and clocks/ICU	100%	At end of 2019	
Use of boards or alphabets and specific applications and systems using visual contact to communicate with patients with invasive mechanical ventilation who cannot talk (see Programme 2: Communication). See Annexe VIII (A.3.2.)	Supplies	Existence of boxes with systems to communicate with the patient	Yes	--	Hospital management/ Nursing supervisor
		% of boxes with systems to communicate with the patient/ICU	100%	At end of 2019	
Installation of an intercom connected to the nursing station	Technical memorand-um	Existence of boxes with intercom	Yes	--	Hospital management/ Service chief
		% of boxes with intercom/ICU	80%	At end of 2019	
Specific objective 4: Encourage entertainment for the patient					
Use of reading lights for conscious patients See Annexe VIII (A.4.1.)	Technical memorand -um	Existence of boxes with reading lights	Yes	--	Hospital management/ Service chief
		% of boxes with reading lights/ICU	100%	End of 2019	
Availability of a TV receptor, where possible. See Annexe VIII (A.4.2.)	Technical memorand -um	Existence of boxes with TV	Yes	--	Hospital management/ Service chief
		% of boxes with TV/ICU	>50%	End of 2019	
Installation of background music, where possible. See Annexe VIII (A.4.3/)	Supplies	Existence of compartments with background music	Yes	--	Hospital management/ Service chief
		% of boxes with background music/ICU	100%	End of 2019	
Installation of Wi-Fi for tablets and mobiles allowing patients to communicate with loved ones and connect to outside world, favouring entertainment. See Annexe VIII (A.4.4.)	Technical memorand -um	Existence of boxes with Wi-Fi connection	Yes	--	Hospital management/ Service chief
		% of boxes with Wi-Fi per ICU	80%	End of 2019	
Availability of a telephone inside the room (optional) See Annexe VIII (A.4.5)	Technical memorand -um	Existence of boxes with phones	Yes	--	Hospital management/ Service chief
		% of boxes with phones/ICU	60%	End of 2019	
Availability of access to sufficient games (PICU), children's videos, books, videogame consoles and educational material for all children admitted covering ages from baby to teenager	Supplies	Existence of educational and reading material for children and teenagers	Yes	--	Hospital management/ Nursing supervisor

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Creation of a specific space for adolescent patients, so they have their own place to retreat to and meet in privacy (different from the concept of parents' room), where possible	Hospital management memorandum	Existence of a specific space for adolescent patients	Yes	--	Hospital management/ Service Chief
Specific objective 5: Make available spaces in gardens or patios and ensure patient access to them (wheelchairs, beds, etc.)					
Make the most of spaces in gardens or patios for patients, guaranteeing access to them (wheelchairs, beds, etc.), where possible. See Annexe VIII (A.6)	Technical memorandum	Existence of open spaces for ICU patients, where possible	Yes	--	Hospital management
Specific objective 6: Guarantee the education process for school age patients during their stay in ICU					
Creation of a school for children or access for school age patients to "hospital classroom" resources during their stay in ICU	Hospital management memorandum	Existence of school for children or access to "hospital classroom" resources	Yes	--	Hospital management
Specific objective 7: Ensure comfort and functionality in the treatment area					
Controlling of appropriate and adequate lighting to work in the area. In NICUs, ensure the special conditions required by this unit. General lighting in the rooms of adult and paediatric patients is of 100 lux. (For NICUs consult Annexe VIII section E)	Technical memorandum	Existence of spaces with lighting that fulfils regulations in all common areas	Yes	--	Hospital management/ Maintenance Service
Adequate noise control in the work area. In general, total background noise level in intensive care should stay below 40 dBA, with a maximum operative level of 55 dB in work areas, which allows education and learning. In NICUs, ensure the special conditions this units requires, See Annexe VIII, section E	Technical memorandum	Existence of spaces with noise levels in line with regulations in common areas	Yes	--	Hospital management/ Maintenance Service
Implementation of an adequate access to documentation with sufficient computer points and Wi-Fi to consult patient histories in doctors' and nurses' rooms. See Annexe VIII (B.3)	Technical memorandum	No of computers installed/ Ideal No of computers x 100 (one per box, one in room for every 3 people)	80%	At end of 2019	Hospital management/ Service Chief
Installation of a clinical information system (SIC) adjusted to the unit's workflow and that allows working in a network	Technical memorandum	Existence of SICs in ICUs adjusted to unit's workflow (Annexe VIII (B.3))	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with SIC adjusted to the Unit's workflow	90%	At end of 2019	
Implementation of a central monitoring system that collects all the unit's monitors, controlled by medical and nursing staff, from a space easily accessible from the bays. See Annexe VIII (B.4)	Technical memorandum	Existence of a central monitor	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with central monitor	90%	At end of 2019	
Installation of systems that allow the patient to be seen from control (circular designs, installation of cameras and connection to closed circuit, etc.)	Technical memorandum	Existence of bays with proper visual access	Yes	--	Hospital management/ Maintenance Service
		% of bays with proper visua access/ICU. See Annexe VIII (B.5)	80%	At end of 2019	
Specific objective 8: Ensure comfort of staff and in the administration area					
Make available appropriate work spaces equipped with the necessary installations to complete the work	Technical memorandum	Existence of work spaces prepared for the function that will take place in them	Yes	--	Hospital management/ Service Chief
Make available rooms for guard staff, with appropriate spaces and preserving the driving aesthetic theme found in the unit. See Annexe VIII (C.2)	Technical memorandum	Existence of rooms for guard staff with appropriate spaces	Yes	--	Hospital management/ Maintenance Service

ACTIVITIES AND EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STAND-ARD	REGUL-ARITY	RESPONSIBILITY
Specific objective 9: Ensure comfort in the family and parent area (Neonatal and Paediatric Intensive Care Units, NICU & PICU)					
Installation of an appropriate signposting system involving visible signs on rooms, signs to show access routes, preserving the aesthetics established by the unit. See Annexe VIII (D.1)	Technical memorandum	Existence of signposted bays	Yes	--	Hospital management/ Maintenance Service
		% of signposted bays/ICU	100%	At end of 2019	
Make available "sitting rooms" instead of "waiting rooms", where possible. See Annexe VIII (D.2)	Technical memorandum	Existence of an appropriate sitting room for family members	Yes	Five Years	General director of healthcare coordination/ Hospital management
		% of ICUs with an appropriate sitting room for family members	50%	At end of 2019	
Make available rooms for relatives in highly critical situations that ensure privacy, where possible	Technical memorandum	Existence of a family room for critical situations	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with a family room	>95%	At end of 2019	
Make available a room where a terminal patient can be accompanied in an intimate way in order to say goodbye, without pressures of time or space, in order to begin the healthy grieving process. See Annexe VIII (D.4)	Technical memorandum	Existence of a "good-bye" room	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with a "good-bye" room for relatives	>95%	At end of 2019	
Specific objective 10: Ensure specific operation in ICUNs					
Make the unit's distribution appropriate so that the care process can be focused on treating the mother-baby-family unit, with CCD/NIDCAP	Technical memorandum	Existence of optimal distribution in NICUs	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUNs with optimal distribution	100%	At end of 2019	
Provide adequate levels of comfort in the waiting room, as well as in the patient, staff and family areas	Technical memorandum	Existence of spaces with adequate comfort	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUN spaces with adequate comfort	>95%	At end of 2019	
Make available a specific rest room attached to the Unit for parents (personal hygiene and showers, resting/living room), where possible	Technical memorandum	Existence of a rest area for parents	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUNs with a rest area for parents	>95%	At end of 2019	
Make available a meeting room for parents and support groups, where possible	Technical memorandum	Existence of a meeting area for parents and support groups	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with meeting areas for parents	>95%	At end of 2019	
Make available a space for "sibling workshops", to prepare siblings (and other family members) for entry into the Unit and meeting with the young patient, where possible	Technical memorandum	Existence of "sibling workshop" spaces	Yes	--	General director of healthcare coordination/ Hospital management/ Service Chief
		% of ICUs with "sibling workshop" spaces	70%	At end of 2019	

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Programme 8: End-of-life Care

Justification

Although the primary goal of intensive care is to recover either fully or partially the condition prior to the patient's admittance, on occasions this is not possible. At this point, the therapeutic objective will change, the fundamental basis of the new approach being to reduce suffering and offer the best possible level of care, including that related to end-of-life.

On this point the ethics committee of the Society of Critical Care Medicine establishes that "… palliative and intensive care are not mutually exclusive options but should rather coexist…" and "…the healthcare team has the obligation to administer treatments that alleviate suffering that originates from physical, emotional, social and spiritual sources…".

The primary goal of palliative care (PC) in any clinical sphere is to administer comprehensive care to the patient and his/her surroundings with the intention of allowing for a death that is "…free from discomfort and suffering for the patient, family members and carers, in accordance with his/her wishes and clinical, cultural and ethical standards…". In this context, and according to diverse studies, in SMIs approximately 10-30% of deaths occur after beginning limitation of life support (LLS) (Annexe IX).

LLS will be applied comprehensively in a global palliative care plan that will include both pharmacological and non-pharmacological measures that, with a focus on dignity and comfort, will include the both the patient and family's physical needs as well as psychosocial and physical ones. This approach must be carried out in an interdisciplinary manner, and all professionals involved in the treatment must be made aware of this.

The complex decisions made in the context of the critically ill patient at the end of his/her life can produce discrepancies between healthcare professionals, and between the latter and the family members or carers in the specific case of the paediatric patient. Professionals must have at their disposal the skills and tools necessary to resolve these conflicts. Open and regular discussion will be important, allowing to create a teamwork culture that is open, coherent, and flexible and allows parties to lay out their doubts and worries at an early stage, and after death, in a constructive manner *(see Annexe IX).*

General objectives

⇨ Ensure the adaptation of end-of-life care (AEoLC) that covers the physical, mental, emotional and spiritual needs of patients and family members and provides support for professionals
⇨ Create an appropriate process and record of LLS following the recommendations of scientific communities
⇨ Reduce the uncertainty and variability of LLS in certain diseases

Specific objectives

1. Have a AEoLC protocol
2. Control physical symptoms of patients in end-of-life situations
3. Facilitate the accompaniment of patients in end-of-life situations
4. Cover the emotional and spiritual needs of patients and family members in end-of-life situations
5. Have a LLS protocol that follows the recommendations of scientific communities
6. Ensure that patients' needs and autonomy in LLS decision-making are respected
7. Ensure the participation of all the professionals involved in the LLS.
8. Have specific criteria for LLS for certain diseases

EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Elaboration/Updating of a protocol for optimising end-of-life care, multidisciplinary	Specific document	Existence of a protocol for optimising end-of-life care	Yes	--	Service Chief/ Nursing supervisor
		SEMICYUC indicator	100%	Yearly	
Implementation of palliative sedation appropriate for patients in an end-of-life situation	Clinical history: Prescription note and administering of treatment	No of patients in end-of-life situations with palliative sedation appropriate to the symptoms/No of patients in end-of-life situations	>95%	At least one yearly observation	SMI professional responsible for the approach
Implementation of flexible visiting hours for families of patients in end-of-life situations (See programme 1: ICU 'open doors')	Specific record or direct observation	No of patients in end-of-life situations with flexible visiting hours/No of patients in end of life situations	100%	At least one yearly observation	Service Chief/ Nursing supervisor
Integrations of emotional support mechanisms for patients and families in end-of-life situations	SMI working plan	Availability of healthcare resource: Access to a psychologist	Yes	--	Hospital management/ RRHH
Elaboration/Updating of the LLS protocol (Limitation of Life Support)	Specific document	Existence of a LLS protocol	Yes	--	Service Chief/ Nursing supervisor
		SEMICYUC indicator	100%	Yearly	
Implementation of a specific record for LLS	Specific record: Clinical information system	There is a specific record for LLS	Yes	--	Hospital management SMI/ Systems
		% of ICUs to have a specific record for LLS	70-80%	At end of 2019	

EVALUATION					
ACTIVITIES	ACTIVITY RECORD	INDICATOR	STANDARD	REGULARITY	RESPONSIBILITY
Systematic consultation of the medical centre's record of prior instructions for patients who receive LLS	Specific record	No of patients with LLS for whom the record has been consulted/No of patients with LLS	>95%	Twice monthly	Hospital management/ Service Chief
Incorporation of prior instructions in decision-making leaving evidence of the process in the clinical history	Clinical history	No of patients with LLS were the existence of prior instructions has been taken into account/No of patients with LLS	>95%	At least one yearly observation	Service chief
		No of clinical histories of patients with LLS that state the use of prior instructions in decision-making/No of clinical histories of patients with LLS	>95%		
As far as possible, LLS with be carried out as a consensus with the participation of nurses and other professionals involved in the patient's care	Clinical history	No of LLS completed by consensus and with the participation of the nursing staff/No of LLS	>90%	At least one yearly observation	Service Chief
Elaboration of specific protocols for LLS in agreement with other specialities	Specific documents	Existence of protocols on LLS in determined diseases	At least 1	Yearly	Head of SMI/ SMI professional responsible for the approach

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Annexe 1. Definition of "ICU open door policy"

An "open doors" ICU can be defined as "those units who have as one of their objectives the reduction or elimination of any limitation imposed on temporal and physical aspects, as well as those related to relationships, for which there is no justification" (Giannini A. 2010). In general, it refers to the set of patterns or rules of operating in ICUs directed towards supporting communication between patients and both their family members and the professionals who treat them.

The "open doors" ICU considers actions related to relaxing rules on the time and number of people who may visit patients, proximity (physical contact, nearby waiting rooms) and communication.
It includes measures such as those indicated below:

- Visiting rules that respond to the needs of patients and families without hindering the work of the professionals, along the following guidelines:
  a. Relaxing rules on visiting hours or longer visits
  b. Visits from adolescents and children
  c. Accompanying the patient through the dying process
- Remove barriers that are consistently unnecessary (except in special cases) such as gowns, footwear
- Recognise the patient as an autonomous person, capable of deciding who if next-of-kin.
- Facilitate communication between patients and families
- Facilitate communication between family and professionals (see programme 2).

1. Avoid gloves in paediatric patients: It will be avoided that parents or family members who look after them use gloves,

Specific measures for PICUs

since children need and even ask for direct hand on skin contact.
2. Avoid masks in paediatric patients: the use of masks will be restricted to cases where the patient or parents have an infectious-contagious illness that can be transmitted by air. The facial expressions of those who surround the child is paramount to his/her cognitive and emotional development, especially in children of breast-feeding age. A child does not smile if she/he is not smiled at. For a child of breast-feeding age to see those around him/her with a mask is like seeing a world without faces, facial expression, or smiles.
3. The child has the right to be accompanied by parents for as much time as possible. With the goal of guaranteeing this right, paediatric ICUs must have individual rooms with a bed for an accompanying person to accommodate chronic patients or patients with illnesses that require long periods of hospital admission, such as oncological illnesses, transplants, etc.
4. Wherever possible, it is recommended that the parents participate in the care of their children while these are in the PICU: daily washing, feeding, aspiration of secretions, tracheostomy change, etc.
5. Parents may be present at the foot of the bed during multidisciplinary daily ward rounds to increase time spent with children
6. Parents may be present during invasive procedures and during cardiopulmonary resuscitation (CPR), if they wish to, and the medical and nursing team are in agreement. In such cases the presence of a healthcare professional will be required who has been trained to explain to the parents the procedure taking place and what is happening in the clinical setting.

Barriers to the change and possible solutions

Barriers

a. Physical barriers: architectural structures.
b. Opposition by other services
c. Perception by ICU staff:
- *It is not considered a problem*
- *A restrictive visiting policy is frequently preferred*
- *Arguments presented in favour of a restrictive policy:*
- *Protection of patient against:*
  - *Infections*
  - *Applied systems*
  - *Protection of the work*
  - *Avoid family-induced psychological stress*
  - *Patient-related*
  - *Staff-related*
  - *Family-related*

d. Related to patients' family members:
- *Not knowing reason for the change*
- *Feeling of guilt if visiting time is not used*
- *Perception of inappropriate levels of privacy*
- *Language barriers (in communication with professionals)*

Possible solutions:

a. Motives for opening the ICU's doors:
- *Visitors do not increase risk of infection*
- *Continuing communication favours the information process*
- *Family members can help the patient's recovery and come to "be part of" the ICU team*
- *The child has the right to be accompanied by his/her parents as much time as possible (European Charter for Children in Hospital, 1986)*
- *The presents of parents and family members reduces stress, fear and anxiety in the child reducing need for sedation and analgesia, favouring harmony with the respirator, reducing cardiovascular stress and reducing length of stay in ICU.*
- *The participation of the parents in the child's treatment reduces axiety and fear in the parents, which also has positive repercussions on the child's treatment*
- *Family members have the right and the obligation to participate in the end-of-life process*
- *It is beneficial for the ICU:*
- *Valuing of the work*
- *Human relations*
- *It is obligatory for new circumstances*
- *Lower sedation levels*
- *Admission of less seriously ill patients*

b. Promote consensus and alliances through information-sharing/communication with all patients
c. Education/training:
- *Culture of openness (base: courses, workshops, seminars).*
- *Way the change is carried out (functioning: information booklets).*

Annexe II. Analgesia, sedation, delirium

Pain, anxiety, agitation, stress or alterations in the circadian cycle are frequent problems among patients admitted to ICU. They are all, to a greater or lesser degree, related to another relevant complication such as delirium; and together with the coma they are frequent manifestations of cerebral dysfunction in the critical patient associated to a clinical decline. An appropriate management of these symptoms improves the patient's progress in the short and long term, can reduce morality and, probably, also reduces the condition known as post-ICU syndrome. The persistence of pain, becoming chronic pain, sleep alterations and post-traumatic stress are reduced significantly.

The priority goal should be to keep the critical patient alert and pain-, anxiety- and delirium-free. There is sufficient evidence to show that this is possible, safe and beneficial for the patient. It is possible that this might not be a viable option for some patients, at least in the very first stages of the illness, but the aim must be for these patients to be a smaller group and not the majority of cases.

The concept of the "ICU triad" recognises that pain, agitation and delirium, and therefore their treatment, are inextricably linked. In accordance with the principle that it is better to treat the illness than merely cover it up, sedatives should only be used when pain has been treated and delirium either ruled out or treated.

Objectives

1. Pain

1.1. Keep the patient pain-free: verbal-numerical rating scale (VNRS) <4 or Behavioural Pain Scale (Spanish version- ESCID) <4.

2. Sedation

2.1. Define a daily sedation goal in each patient, adapting to his/her clinical situation. This should maintain a level on the RASS (Richmond Agitation-Sedation Scale) between 0, -2 in the majority and <-4 only in unique cases:
- *Treatment with neuromuscular blockers.*
- *Intracranial hypertension.*
- *Refractory status epilepsy*
- *LLS*
- *Some cases of severe respiratory distress (PaO2/FiO2 <120).*
- *Completion of some diagnostic or therapeutic procedures*

Actions

1. Monitoring

1.1. Adequate monitoring and documentation of pain (record on the patient's chart)

1.1.1. Communicative patient. Verbal numerical rating scale (VNRS) or analogue scale (VAS): The best pain indicator in patients is their own self-reporting, in terms of intensity as well as duration and characteristics. It must be recorded in validated scales, those most appropriate in the case of critical patients being the VNRS (in its visual and verbal

versions), followed by the VAS.

1.1.2. Non-communicative patient. Behavioural pain scale (Spanish version- ESCID): Wherever possible, the assessment of pain in these patients must be based on behavioural pain indicators, by means of validated scales. The only scale of such characteristics that has been validated and is in Spanish is the ESCID. In patients whose behavioural indicators can be slanted or eliminated (deep sedation, neuromuscular blockers, severe polyneuropathy, tetraplegia, etc.), variations in physiological constants produced by sympathetic stimulation, such as hypertension, tachycardia, perspiration and mydriasis are clues to the presence of pain.

1.1.3. Frequency: At least every four hours or any time pain is suspected, analgesia will be administered by epidural bolus or the speed of transfusion of pharmacological drips will be modified, and also prior to procedures documented as painful. Among painful procedures, some of the most notable are the treatment of wounds and drainages, with special attention to chest drains; aspiration of tracheal secretions; the mobilisation of patients; the insertion of venous and arterial catheters and respiratory physiotherapy.

Furthermore, for any analgesic therapy pain must be assessed and documented before and after the administration of the drug, in order to evaluate response.

1.2. Adequate monitoring and documentation of sedation

1.2.1. Use of scales of sedation (RASS/SAS – scale of agitation of sedation -) in patients with superficial sedation.

1.2.2. Objective monitoring (example: bi-spectral index - BIS®-) in patients with RASS < -4 and in patients with neuromuscular blockers.

1.2.3. Frequency: At least once every 4 hours and after any change in the dosage of sedatives and/or analgesics.

1.3. Optimisation of analgesia and sedation in accordance with the monitoring process

1.3.1. Administration of analgesic drugs necessary to reach VNRS or ESCID values of <4

1.3.2. Once absence of pain has been ensured, administering of sedative drugs to obtain the following RASS values:

- Between 0 and -3 for those patients for whom it has been found necessary to achieve conscious sedation. Adjustments will be made to necessary drugs to reach dynamic sedation.

- Between -4 and -5 for those patients mentioned in point 2.1, where deep sedation is found necessary. In these cases hourly monitoring will be completed using the BIS® system or another form of objective monitoring, in order to obtain values between 40 and 60 and suppression rates of 0%.

1.4 Appropriate monitoring and documentation of delirium

1.4.1. Use of scales CAM-ICU or ICDSC in patients with RASS>-3

1.4.2. Frequency: at least every 12 hours

In Paediatrics there are specific scales to assess delirium (the prevalence of delirium in PICUs is 20%): CAPD scale (Cornell Assessment Paediatric Delirium), PAED (Paediatric Anaesthesia Emergency Delirium Scale), pCAM-ICU (Paediatric Confusion Assessment Method- Intensive Care Unit)

2. Prevention of delirium (including anxiety and agitation)

2.1 Correct physical/sensory deficits

Example: permit use of glasses, headphones, dental prosthetics

2.2 Measures for the patient's reorientation

- *Visible clock, calendar, control of ambient lighting*
- *Permit the patient to have available objects familiar to him/her*
- *Facilitate regular visits by family and friends, and the lengthening of their stay*
- *Explore measures for psychological comfort and comfortable surroundings*

2.3. Avoid sleep deprivation

- *Explore measures to make surroundings comfortable*
- *Adjust time schedules for medication and nursing procedures*
- *Avoid monitoring at unnecessary times, during sleep*
- *Measures to facilitate sleep and help maintain the circadian cycle (for example: earplugs, eye mask, music, massage, medication)*

2.4 Avoid immobility

- *Early mobilisation, active and passive exercise sessions, limit devices that reduce the patient's mobility (tubes, catheters, etc.)*
- *Avoid therapeutic immobilisation measures: restraints*
- *Timely removal of catheters, tubes, etc.*
- *Facilitate, where possible, the participation of the patients in his/her self-treatment (for example, personal hygiene)*

2.5 Appropriate pain treatment

Poor analgesia can trigger delirium

2.6 Appropriate selection of sedatives

3. Treatment

3.1. Treatment of pain

3.1.1. *Preventative treatment before carrying out potentially painful procedures*

3.1.2. *Analgesia based preferentially on use of opiates*

3.1.3. *Supplementary use of non-opiate analgesics to reduce the dosage of the opiates. This can be the primary alternative in cases of light pain.*

3.1.4. *Assess the use of local anaesthetic (thoracic epidural) in select conscious patients (for example, thoracic trauma)*

3.2. Sedation

3.2.1. Appropriate selection of sedative: preferential use of propofol or dexmedetomidine. Limit use of benzodiazepines (midazolam) for patients who require deep sedation or management of abstinence symptoms.

3.3. Treatment of delirium

3.3.1 In the event that the CAM-ICU tool gives positive values:

- Look for the aetiology
- Check if the non-pharmacological measures describes in the previous bullet point are being applied
- Check what medication has been given and remove that which is unnecessary. Avoid benzodiazepines.
- As a last resort assess pharmacological treatment

Indicators

Developed by the Society of Intensive Medicine (SEMICYUC), 2011. *http://www.semicyuc.org/temas/calidad/indicadores-de-calidad*

1. Monitoring of sedation
2. Appropriate sedation
3. Daily assessment of sedative interruption
4. Monitoring of pain in the communicative patient
5. Monitoring of pain in the non-communicative patient
6. Inappropriate use of neuromuscular blockers
7. Monitoring of neuromuscular blockers
8. Identification of delirium
9. Maximum dosage of opiates and sedatives
10. Monitoring of sedation during neuromuscular blockage

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Annexe III. The figure of primary carer for long-stay patients

- In long-stay patients, family presence will be facilitated
- The selection of one-two primary carers per patient will be assessed, who can be in the ICU with complete flexibility in time schedules
- The carer must always be adequately identifiable, which will be facilitate by his/her ID card
- The primary carer will be trained in hand hygiene techniques and the corresponding isolation measures will be explained to the carer in particular cases.
- The primary carer must adhere to some exceptions:
  - ⇨ When the patients requires specific treatments he/she will have to leave the unit whenever indicated by staff, and also:
  - ⇨ If the patient wishes it
  - ⇨ If the carer fails to follow the rules of the unit

By way of example:
ICU rules for the University Hospital of Torrejón (Hospital Universitario de Torrejón) for the primary carer.

Information and rules for the primary carer

1. Characteristics of the Unit

Your relative has been admitted to the Intensive Care Unit. When you enter the unit you will find your family member monitored by a number of cables and apparatus making different sounds.

The Unit's staff has central control monitors that allow them to see everything that is happening and will assist whenever necessary

The unit has 16 individual compartments. It is important that once inside your family member's compartment you do not come in and out continuously, in order to preserve the privacy of the other patients

2. Visiting hours for the primary carer and basic rules

As primary carer you will be the person with the greatest amount of responsibility in terms of accompanying and receiving information about your family members. You will be able to enter the unit from 11 o'clock in the morning and remain until 10 o'clock at night, always with your ID card visible. During ordinary visiting hours there may only be two people accompanying the patient.

Basic rules that you must follow:

⇨ Always ring the bell before entering the Unit
⇨ Leave the waiting room when indicated by staff, and avoid staying in the corridor
⇨ Do not bother the rest of the patients in any way: we ask that you speak in a low voice and avoid using mobile phones
⇨ Do not allow food to enter the Unit
⇨ If the patient wishes access to food, he/she will have to leave the ICU
⇨ Exceptions aside, medical information will only be given out in accordance with the established schedule up until 14:00
⇨ Healthcare staff will be able to make the decision to take away your primary carer's card for a number of reasons, always seeking the best interests of the patient. In this case you will still be able to access the unit during established visiting hours in the morning and the afternoon/evening.

3. Hand hygiene

Whenever you come in and out of your family member's compartment you must apply hydroalcoholic solution to your hands. You will find dispensers at the entrance and exit of both the compartment and the unit. You will find the hand hygiene technique instructions attached- if you have any questions, do not hesitate to contact the unit staff.

4. Isolations

It is possible that your family member be put under ISOLATION measures for diverse reasons that will be explained to you

- ⇨ You will wash your hands before entering
- ⇨ You will put on a gown and gloves to be found on the side table at the compartment's entrance
- ⇨ You will put on a mask if necessary
- ⇨ Whenever you leave the compartment you will take off your gown and gloves, placing them in the black bins you will find inside the compartment
- ⇨ You will wash your hands on leaving the compartment
- ⇨ When you require attention of the healthcare staff you will ring the bell

If you have any doubts about any of the points made above, do not hesitate to contact any member of staff

UNIVERSITY HOSPITAL OF TORREJÓN
INTENSIVE CARE UNIT

INFORMATION AND RULES FOR PRIMARY CARER

I (name of relative)

……

With national ID (DNI) number:

……

Relation to the patient:

……

Have been informed of the rules for being primary carer and agree to comply with them.

In Torrejón de Ardoz, on the …… of ……. 2016

Signature of primary carer

Annexe IV. The school for ICU relatives

- Analysis of the patient's specific needs
- Leaflet listing of needs and activities that each family will complete
- Corresponding training measures on the part of the team: for personal hygiene, rehabilitation, feeding
- Training for the team on teaching skills and standardisation/elaboration of treatment leaflets
- Database of primary carers

Annexe V. "ABCDEF" bundle of measures (original version and tools available at www.icudelirium.org)

A

Assess, Prevent and Manage Pain

There are validated tools that are recommended that can be used in every patient every day.

B

Both spontaneous awakening trials and spontaneous breathing trials

Providing sedoanalgesia when needed but stopping it when unnecessary to avoid over-use and unwanted side effects.

C

Choice of analgesia and sedation

Published evidence helps to decide which is the best option for a patient's specific circumstances

D

Delirium: Assess, prevent and manage

There are validated tools that are recommended that can be used in every patient every day

E

Early mobility and exercise

Optimise mobility and exercise for every patient according to his/her ability (with the help of whichever team member assigned the responsibility) in order to restore mobility

F

Family engagement and empowerment

Good communication with the family is critical at every step of a patient's clinical course, and empowering the family to be part of the team to ensure best care is adhered to diligently will improve many aspects of the patient's experience. The F reminds us that patients and families are the centre and focus of care.

Annexe VI. Example of "ICU without delirium" protocol. University Hospital of the Southeast (Hospital Universitario del Sureste)

ICU WITHOUT DELIRIUM PROJECT

INTENSIVE MEDICINE SERVICE, UNIVERSITY HOSPITAL OF THE SOUTHEAST

ON ADMISSION

- SCALE OF DELIRIUM RISK
- ASSESS COMPLIANCE AND RISK OF DEPRIVATION
- ASK FOR GLASSES OR HEADPHONES
- ADJUST MEDICATION FOR NIGHTTIME

AT NIGHT

- TURN OFF LIGHTS AT 00:00
- ADJUST VOLUME LIMITS ON ALARMS
- PROGRAMME ACTIVITIES TO RESEPCT SLEEP
- ASSESS SUSPENDING CONSTANT SOURCES OF DISTURBANCE

DAILY

- MONITOR DELIRIUM (ICDSC).
- MOINTOR PAIN (EVA OR BPS). PROTOCOL.
- DECIDE SEDATION AND MOBILISATION GOAL
- REASSESS NEED FOR RESTRAINT
- REASSESS REINTRODUCTION OF MEDICATION
- FREQUENT REORIENTATION
- FAVOUR LONGER VISITS FOR HIGH-RISK PATIENTS
- ENCOURAGE USE OF NEWSPAPER, RADIO, GLASSES, HEADPHONES...

AT START OF WEANING PROCESS

- NON-DEPRIVATION PROTOCOLS
- REMIND TO USE GLASSES & HEADPHONES

AT DISCHARGE

- FILL DATABASE
- QUALITY INDICATORS

Annexe VII. Follow-up consultation for patients with post-intensive care syndrome

Two months after discharge, patients identified as high-risk will attend the consultation:

- To be checked and to undergo functional assessments of their state of health and their social needs
- To refer the patient to the appropriate rehabilitation services and/or to those of other specialists
- The consultation will remain in place for patients who are recovering more slowly than expected or who have developed a previously unidentified morbidity.

Annexe VIII. Humanised infrastructure

A. INTERVENTIONS IN THE PATIENTS' AREA

A.1. Interventions for patient privacy

A.1.1. Patient privacy

Through the use of folding screens, curtains and other separation methods between bays that make privacy possible.
The folding screens and curtains must be made from approved materials whose durability, resistance, hygiene and ease of cleaning are certified, fire retardant and where possible with noise absorption.
Mobile features must be easy to move around and have various possible positions to adapt to specific needs and spaces. Curtains must be easy to move.

A.1.2. Individual compartments

The best way to make the patient feel at home is to have his/her "own space" and privacy. For this reason it would be highly beneficial for all ICUs to have individual compartments, with windows and translucent doors.
When the patient requires privacy, such as for personal hygiene activities, curtains and, ideally, light-dimming systems ("electronic glass", which loses transparency when an electrical current is applied to it) can be used to obstruct the view from the outside.
Door locks (automatic: swing doors should be avoided), that allow the patient to communicate with relatives in total privacy, without anybody hearing them.
Furthermore, this reduces ambient noise which, according to the World Health Organisation (WHO) must be kept below 40 dB. *(See A.4.)*

A.1.3. Compartments with bathroom, or near to shared bathrooms

The bathroom should be highly functional, with a door that has the minimum dimensions for a wheelchair to fit through it, and with minimum measurements for the space inside so that the wheelchair can perform a 360° turn without any obstacles, and so that the person can be accompanied by someone.
The access to and size of the bathroom must allow the possibility to bring out a person who has collapsed.
The elements necessary to guaranteeing the patient's safety will be provided: an approved toilet fitted at an appropriate height to be used from a wheelchair, with support bars and handles to assist the user.
The shower will be at floor level and will have a fold-down seat, support bars and anti-slip, quick-drying and easy to clean floor.
The sink must be accessible from a wheelchair and have a mobile or folding mirror.
The bathroom must also have adequate lighting, natural if possible, and a ventilation system that ensures airflow. Furthermore, it must have oxygen outlets installed and a system to communicate with healthcare staff.
An internal sink is recommended (or at least one sink per two compartments).

A.2. Patient's environmental comfort

A.2.1. Appropriate colours and pictures (paediatric patients)

Appropriate colours, paintings and drawings or graphics, taking into account the decoration of the ceiling, which is sometimes all the patient sees.
Colours influence our mood, all have a certain meaning, since we tend to associate feelings with specific colours. Ideally a "general neutral space" would be created, to be contrasted with an "active space".
The "general neutral space" is created with clear colours, preferably white for walls and ceilings, since the colour amplifies rooms making them seem bigger, and reflects light to make them seem brighter.
The "active space" is created with one or several colours to be picked according to the needs, uses or feelings to be created in the space.
It is important to integrate the two spaces in a way that is aesthetic, decorative and functional.

This chart shows the beneficial effects of different colours on our mood that can be taken advantage of to the benefit of patients, relatives and healthcare staff.

	FEELINGS AND IMPRESSIONS	
RED	Heat Closeness Happiness	Bravery Strength Enthusiasm
ORANGE	Fun Sociable Welcoming	Lessens afflictions Combats fatigue
YELLOW	Fun Optimistic Friendly Clears confusion and negative thoughts	Raises self-esteem Helps with depression, phobias and fears
BLUE	Rest Trust	Serenity Calm
GREEN	Tranquillity Security Harmony Stability	Activates memory Combats stress, tiredness and insomnia

In terms of images, decorating the walls with drawings for children can reduce the need for sedation and analgesia in children.
Furthermore, providing the patient with a positive distraction in the form of images of nature and pictures for children favours the curative environment.
Daily exposure to images of nature leads to a significant recovery from stress in just a few minutes (reduction of arterial and muscular tension). This effect is greater in patients confined to closed spaces for long periods.
Pilot studies show that virtual skies on the ceilings have a beneficial effect, causing physiological relaxation and modifying the negative subjective experience of being in an enclosed space. These skies are especially useful in units, such as ICUs, where patients are lying down looking up. The exposure to early visual stimulation accelerates neurological recovery in patients with moderate neurological dysfunction (e.g. after cardiac surgery)

A.2.2. Natural light

The ganglionic cells, the intrinsically photosensitive cells of the retina which are also known as the “third photoreceptor”, are stimulated when there is a sufficient quantity of blue light in wave longitudes of approximately 482 nm. They send information to the suprachiasmatic nucleus of the hypothalamus, the brain’s circadian pacemaker.
The normal functioning of the third photoreceptor of the retina is important for normal biological and physiological activities, and for health in general.
As well as maintaining circadian rhythm, the third photoreceptor has been shown to be important in various non-retinal illnesses, such as sleep disorders, seasonal affective disorders, mood disorders and migraines.
The biological effect of stimulation of the third photoreceptor of the retina is also mediated by melatonin, serotonin and cortisol, in other words with circadian rhythm, mood, depression and stress.
In order to preserve the sleeping/waking cycle (circadian rhythm), to animate the patient and avoid delirium, designs will be prioritised with windows to the outside fitted with blinds or curtains, and with mirrors to see outside if it is not possible to guide the patient to the window without losing control.
In the case of an internal ICU, the situation can be adapted by substituting the existing lighting for new lights that are programmed to simulate the solar cycle, that can be managed from the control station. This will avoid modifying the patient’s circadian rhythm.
Natural light will be complemented with quality artificial lighting that professionals will use to carry out their work.
It is also recommended that the patient has a bedside lamp to use for reading. *See A.5.2. Light control.*

A.2.3. Furniture

With the appropriate furniture and its correct distribution, a functional space with optimal circulation can be created, which avoids unnecessary disturbances and obstacles. In this way, the staff can carry out their jobs correctly, the patient is made as comfortable as possible, and relatives have space available to them inside the room.
For this reason, a space must be created where the patient feels at home, with the possibility of personalising the room with photos, cards, personal items and other objects brought in by the family.
The patient will have an articulated bed with a control to operate it him/herself and a bedside table for personal belongings.
In the room there will also be a chair-bed for relatives, different from the chair where the patient can sit up from bed when his/her condition permits, with a side table where the relative can leave his/her things when entering (coat, bag…).
Standards of quality and functionality for the furniture must be taken into account:

- *The patient’s bed must be approved, following all standards of security and ergonomics, and guaranteeing stability even when one or two people sit on the sides. There must also be no risk of getting hands, feet or head caught in the bed; beds with wheels must have an efficient braking system that it easy to engage. Electric beds must have their electrically parts protected in a convenient way, to avoid risk caused by falling liquids, and they must have an emergency battery or a manual system that allows the bed to be moved to a horizontal position in the event that it stops working.*
- *The bedside table must be sturdy, and capable of supporting the weight of somebody who leans on it. It must be resistant and easy to clean, without nooks and crannies so it can be cleaned easily. All parts of the table must have rounded edges with no protrusions or sharp edges, with ergonomic drawers. If the table has wheels, (which is recommended), there must be an effective and easy to use braking system that guarantees that the table will not move when somebody leans on it.*
- *Side table for the relative: it must be resistant and*

- *stable, the edges must be rounded with no sharp sides, it must also be easy to clean without indentations and be easily moved to facilitate cleaning of the space.*
- *Patient's chair: made from approved material specifically designed for this function, that disperses the pressure from the patient's body weight to avoid it being concentrated on a particular point and causing a decubitus ulcer. The chair's upholstery must be removable and easy to clean (of imitation leather material). The chair's height must be able to be changed to make it as comfortable as possible to sit down or get up, and must be easily moved to facilitate cleaning of the space.*
- *Sofa-bed for relatives: it must be regulation approved, comfortable and ergonomic, with removable and easy to clean upholstery, that can be moved easily for cleaning purposes.*

All furniture must fulfil the requirements determined by resistance and durability and must be finished for public spaces and hospitals, according to the laws: UNE 11022, UNE 56868, UNE 11019, BS 2483 and UNE 11011, as well as NTP 38: Reaction to fire.

A.3. Encourage communication and orientation

A.3.1. Calendar. Clock.

A stay in ICU constitutes a stressful situation for the patient, causes him/her to feel disoriented, and lose sense of time. For this reason it is important that the patient has a calendar and clock in his/her room that are visible from the bed. It must be possible to remove them if the patient prefers not to be aware of the time he/she spends admitted.

A.3.2. Boards, alphabets, specific apps

In order to communicate with patients with invasive mechanical ventilation who cannot speak. We are observing that steps and being taken to develop new and more advanced possibilities such as "eye tracking" technology, ocular tracking devices that follow patients' eye movements by means of small cameras, allowing them to communicate by looking fixedly at images or words on a screen.

A.3.3. Intercom with central nursing station

It is very important to ensure that each bed possesses communication with the central nursing station.

A.4. Entertainment

A.4.1. Reading light for conscious patients

Bedside light so that the patient can read, with an adjustable bulb and sufficient light for reading without causing dazzling.

A.4.2. TV

The patient can enjoy his/her time more when watching favourite programmes, and this will help to maintain a certain degree of routine. Educational videos on the ICU and its healthcare process can also be shown. The television system must be adjustable so that the patient can see it from the bed or the chair. Solutions exist to enable one monitor to be made into a split screen, reducing the costs of acquiring specific monitors.

A.4.3. Background music

As early as in Ancient Greece, philosophers, historians
and scientists wrote about music as a therapeutic tool. Pythagoras recommended singing and playing a musical instrument every day to eliminate fear, worry and rage from the body, although it is in the 19th century that reports of controlled experiments started to appear.
Music has physiological effects (influencing breathing rhythm, arterial pressure, stomach contractions and hormone levels), and psychological effects: it helps us to control sensations of pain and anxiety. It has also been demonstrated that unconscious people continue listening: the auditory passage, unlike the other sensory system, has an extra opening: the auditory fibres are not affected by anaesthesia, meaning they can continue to listen to music.
It is highly recommended that units have background music so that patients can take advantage of its positive benefits. If this is not possible, it would be good for patients to have access to a radio, music devices, mp3 players, etc., in order to listen to their favourite music.

A.4.4. Wi-Fi connection

For the use of tablets and mobile devices that allow the patient to communicate with loved ones. It is important for two reasons:

- *Remaining connected with relatives and loved ones 24/7 will reduce the stress caused by visiting hours or limitation in the number of people who can visit the patient.*
- *Having Wi-Fi can provide the patient with a great amount of entertainment, since options are infinite: following social networks, reading news articles, watching films, etc.*

A.4.5. Telephone inside the room (optional)

Each room could have a telephone to receive calls from relatives and loved ones. The phone's position must be comfortable and accessible to the patient when in bed.

A.5. Avoid stress caused by light, temperature or noise

Prioritise the appropriate design of spaces to avoid stress factors, taking into account:

- *The location of rest spaces in relation to control spaces, as well as optimal circulation of professionals and relatives*
- *The control of currents of air and of movement, the location of objects that generate noise in the most appropriate place, regulation approved finishing for floors and ceilings with adequate noise absorption properties.*

A.5.1. Temperature control

3 factors must be taken into account:

- ***Temperature:*** *It is important to achieve a temperature that is comfortable for the patient, who must feel neither hot nor cold. The main guidelines that evaluate temperature are UNE-100713:2005, which suggest a temperature*

between 24 and 26° and ASHRAE, which establishes optimum temperature at between 21 and 24°.
There should be a thermostat in each room that can be programmed according to the patient's needs and another general thermostat that controls communal areas from the control point.

- ***Humidity:*** *UNE-100713:2005 guidelines suggest 45-55% and ASHRAE establishes humidity levels at between 30% and 60%.*

RECOMMENDED TEMPAERATURE & HUMIDITY								
	UNE 100713:2005				ASHRAE			
	TEMPERATURE		RELATIVE HUMIDITY (HR)		TEMPERATURE		RELATIVE HUMIDITY (HR)	
	MAXIMUM	MINIUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
HEALTH CENTRE	26°C	24°C	55%	45%	24°C	24°C	60%	30%
OPERATING THEATRE	26°C	22°C	55%	55%	24°C	20°C	60%	30%

- ***Ventilation:*** *The unit's ventilation system must be designed to ensure the necessary circulation of airflow between different spaces. It must have easy access points that permit the completion of cleaning, disinfection and maintenance tasks, and filter changes.*

The direction of air circulation must be from the cleanest zones to the dirtiest zones, and the thermos-hygrometric conditions must be made appropriate to each place. Furthermore, this must be achieved without the level of sound pressure exceeding 30 dB in the worst cases.
According to UNE 100713:2005 guidelines, the ICU is classed as a class 1 premises: with very high asepsis requirements, meaning the system would need to have three levels of air filtration. Air circulation between differently classed spaces is only permissible when it takes place from spaces with high air quality requirements in terms of the presence of germs, towards spaces with less stringent requirements.
Taking as a basis he UNE-EN ISO 14644-1:2000 guideline, and from a preventative perspective in terms of infection, the recommended ventilation system is that of a unidirectional flow and the number of batches of air brought in from outside must be equal to or greater than 20 hourly renewals.
The UNE 100713:2005 guideline indicates that although with three stages of filtration a good level of air quality is obtained, a minimum air flow from outside of 1200 m3/h must be achieved in order to keep ambient concentrations of anaesthetic gases and disinfectants within an acceptable level (≤0.4 ppm).
In order that everything functions correctly attention must be paid to systematic cleaning and, when appropriate, to the disinfection of air humidifiers, including water heaters, heating or cooling batteries and the collection tray for condensation. To this end the service providers will carry out a series of technical and hygiene controls.

A.5.2. Light control

For patients and relatives, automatic photosensitive systems should ideally be used.
It is highly recommended that there be natural lighting in all patients' rooms, but this must be complemented with artificial light, since these spaces have numerous requirements that must be resolved in order to ensure the patient's comfort and provide healthcare staff with an appropriate environment to carry out their work well.
Efficient lighting can be achieved using the following guidelines:

- *General room lighting: 100 lux. Taking into account that sleeping/waking hours must be respected, and if there is natural light it can be turned off until the natural light level lowers and the general lighting needs to be used.*
- *Bed area: 300 lux in order to examine the patient. If more rigorous examinations are required, this can be raised to 1000 lux using a spotlight. This lighting will only be used for examinations and will be operated by healthcare staff.*
- *For emergency situations, at least 2000 lux are required over the surface of the bed, which can be achieved using additional spotlighting or with supplementary general lighting for use only in cases of emergency and operated by healthcare staff.*
- *Reading light: 20 lux. This can be a light set into the head of the bed or a small bendable lamp at the head of the bed. This light will only be used for reading and can be operated by the patient, or by healthcare staff in the case of checks, administering of medication (if it is possible to do so with this light) during the night to avoid turning on the main light and waking the patient.*
- *Monitoring light: 20 lux if there is no reading light. It is good to have a light source that is not very intense for visits/checks during the night to avoid waking the patient. In all cases, the tone of the light sources must be neutral and the chromatic reproduction must fall into group 1B. It is important to avoid them producing reflections in monitors and glass screens, to avoid dazzling patients and healthcare staff.*

TYPE OF LIGHTING	LIGHTING LEVEL IN LUX	TYPE OF LIGHT	COLOUR OUTPUT
GENERAL LIGHTING	100 lux	Warm and neutral	1B
BED LIGHTING	300 lux	Warm and neutral	1B
EXAMINATION LIGHTING	1000 lux	Warm and neutral	1B
EMERGENCY LIGHTING	2000 lux	Warm and neutral	1B
MONITORING LIGHTING	20 lux	Warm and neutral	1B

A.5.3. Noise control

The WHO advises a noise level of 30 decibels. According to the UNE 100713:2005 guideline the maximum sound pressure for ICUs es 35 dB(A). We must maintain this level, especial during resting hours, since noise affects the patient, influences his/her emotional state, and sleep quality can be severely affected.

An increase of 10dB above these maximum ambient noise levels is permitted in order to allow for communication and learning. In other words, an operative noise level of maximum 45dB. This noise level requires a conscious effort by professionals to control the volume of their voices.

The noise generated in the unit can be internal (that which is generated by day to day activities), or exterior (that which comes in from outside the unit).

We can combat noise using materials that isolate the unit acoustically, such as coverings, materials, ceilings, flooring and screens that absorb sound and isolate it, since this is an obligatory requirement according to the UNE EN 1234 guideline, parts 1, 2 and 3. Section 3.1.1 of the DB HR.

On the other hand, we can combat internal noise by substituting sounding alarms for light-based alarms, putting bleeps on vibrate mode, automatic glass doors, noise metres, moderating the level of conversations and the tones of landline or mobile telephones, avoiding bumps, sharp noises and bangs, not dragging furniture, using appropriate footwear to avoid the irritating noise produced by rubber footwear squeaking against the floor.

A.6. Make available spaces in gardens or patios

Accessible (for wheelchairs or beds), so that patients can go out in the fresh air, if their condition allows. Optionally, these spaces could have oxygen and electricity outlets.

From Roman times up until today gardens have had an important place in our lives, and since the 17th century hospitals have included garden areas in their grounds.

Scientific studies have proved the relationship between wellbeing and contact with nature, measuring parameters such as arterial pressure, perspiration and other indicators, which translate into stress reduction, positive thoughts, better capacity for recovery, etc.

There are three different hypotheses that explain the therapeutic benefits of gardens:

- *Nature restores the emotional centres in the limbic system of the brain, evoking comforting biological responses. In this familiar and natural environment relaxation is made possible, with positive results*
- *The colour green sustains cognitive functions, limiting excessive stimulation and the need for constant attention, allowing a person to develop paying attention to him/herself.*
- *An environment with plants and natural features can restore the balance with the perception of the need to control and the ability to control.*

In cases where it is possible, it would be very good for patients to be accompanied by their relatives in these patios or gardens.

Another option is to use rooftop terraces or accessible decks (as long as they are accessible), especially for urban hospitals that do not have garden spaces. If there are no such spaces, at least areas should be created with French windows and natural light where patients may sit and rest.

B. INTERVENTIONS IN THE TREATMENT AREA

B.1. Controlled and appropriate lighting

Suitable for the work that takes place in the area. (there is often an excess of light in the control areas, that affects other areas.

See proposed measures in A.5.2. Lighting control

B.2. Attention to the acoustics of the work area

Noise is one of the factors that most affects the patient during his/her stay. Noise control is summarised in the following instructions for ambient noise: maximum 45dB during the day and 20dB at night.

In work areas for staff and family areas an operative noise level can be reached to permit communication and learning up to 55dB.

The volume of alarms must be regulated so that they do not sound, or sound softly, inside the bays, and louder at the control station.

B.3. Appropriate access to documentation

The minimum requirements are a computer in each patient compartment and outside the compartments one for every three bays or rooms.

In general, there should be sufficient computer outlets and Wi-Fi to allow rapid consultation of clinical histories and results of clinical analyses and imaging tests, and for access to monitors and medical equipment from the medical work rooms and from the nursing station.

It must be made possible to work in a network by means of a centralised computer system adjusted to the unit's workflow.

B.4. Central monitoring system

With access to all the monitors and medical equipment of patients admitted to the ICU. Possibility of access an control by medical staff and the nursing team, from any terminal in the ICU

B.5. Ensure that the patient can be observed and monitored adequately from the nursing control station, avoiding the existence of any blind spots

The distribution of the bays should ideally be circular, with the nursing control station in the centre. In cases where because of the number of bays it is not possible to have a visual connection to each one, it is recommended to install a camera monitoring system.

B.6. Appropriate architecture

- *Improve circulation, plan spaces for optimal functioning, avoiding saturating certain spaces or obstructing view of patients by traffic. For this reason, an internal system for the circulation of patients inside the hospital should be created (for trips to have tests, admittances from A&E or from the wards…)*
- *Adapted architecture: the units have very special requirements: it is important to know what they are and resolve all of them so that the unit can be functional and efficient.*

It is very important that there are no architectural barriers: all spaces must be accessible so that patients in beds can be moved with any apparatus they might need.

For this reason it is of fundamental importance that the corridor be sufficiently wide (2>m) to allow the transporting of the critical patient with medical equipment (monitor, respirator, drip) and with medical and nursing staff at the side of the patient's bed. The flooring must be continuous with no level changes (steps, ramps or other structural features that hinder circulation).
The doors must have measurements that are adapted for easy access for the patient's bed with medical equipment, and with medical and nursing staff at the side of the bed.
The width of the corridor should also permit beds to be turned easily, and access to rooms and lifts.
The lifts should be spacious enough to permit access to, and contain, the bed, the medical equipment and the accompanying medical and nursing staff.
Furthermore it is important to know all the installations that an ICU requires to make sure they are planned into the building: sufficient electricity, oxygen and vacuum outlets in each bay, the necessary machinery for each room, communication with the control station, emergency lighting systems as well as backup power supplies that guarantee the normal functioning of the unit in case of cuts to the power supply; an anti-fire system with smoke detectors, sprinklers or sprays for fires, extinguisher equipment such as fire extinction points and accessible and clearly signed fire extinguishers.
Aspects of comfort must also be taken into account for the unit: appropriate lighting, temperature and ventilation which are also easy to control, facilities made from aseptic material and easy to clean, avoiding angles or corners with poor accessibility and that cannot be cleaned easily.
It is important to consider noise control in terms of considering using material for finishes (floors, walls and ceilings) with adequate noise absorption capacity.
Another element to take into account are the supply records. The facilities require maintenance, checks and repairs, meaning that the relevant records should not be inside the rooms: they should be stored in adjacent rooms or the unit's service rooms to avoid bothering the patients and, as far as possible, patients should not be subjected to the noise or dirtiness that such actions can produce.

C. STAFF AND ADMINISTRATION AREA

The need to humanise staff areas are the same as those for patient and family areas. Natural light, visual connection with the outside world, pleasant colours, welcoming furniture, the possibility of privacy, the introduction of natural features, etc.

C.1. Appropriate spaces

Work spaces must be signposted, indicating the activity that takes places in them. They must be fitted with the necessary facilities to complete the work and must have optimal conditions to carry it out.

C.1.1. Functional and specific furniture

For the work that will be carried out; regulation approved, easy to clean and move, ergonomic, ensuring good posture and avoiding unnecessary exertion, and safe.

C.1.2. Colours and friendly, homely equipment

All spaces in the unit will have sufficient floor space, and the equipment and its arrangement will be appropriate to the work or the activities that it will be used for. Friendly spaces and environments with a homely and aesthetic style of decoration will be created, where staff (who spend many hours in the unit) can feel the same feeling of "being at home" that we are trying to achieve with the patients.
It is recommended to apply the criteria described above for the patients' area, since we must consider the unit as a universal space and harmonise criteria in order to achieve a coherent, functional and integrate aesthetic, adapting, of course, the established design to each area.
See A.1.3. Ensure privacy –Appropriate colours.

C.1.3. Individual lockers in the staff room

So that staff can leave personal effects or a change of clothes

C.1.4. Communication facilities

Staff must have sufficient communication tools, such as computers, telephone, and other internal communication systems.

C.1.5. Environmental comfort

Care must be taken over lighting, with natural light recommended as the main source, with an additional artificial light that must be sufficiently bright (avoiding dazzling), and adjustable. The spaces that do not have one specific use at all times but be regulated by photosensitive detectors.
Temperature will be controlled by staff, and must range between 19-210 in winter and 20-240 in summer, with a relative humidity level between 40% and 60% in winter and summer.
As in the patients' area, noise contamination needs to be controlled: noise levels above 45dB begin to cause discomfort in the workplace.

C.1.6 Rest spaces

The staff that works in the ICU is subjected to very high levels of pressure, meaning that it would be good to have a "disconnecting" space to sit and take a breather. This space should be highly versatile, with a sofa and chairs (welcoming, comfortable and ergonomic), with a side table, a noticeboard to pin up photos of the team, suggestions, etc.

C.1.7. Eating space

There needs to be an office fitted with a cooker, microwave oven, fridge and freezer, with sufficient tables and chairs for staff to store, heat up or prepare their food.

C.2. Rooms for guard staff

The rooms for the guard staff will follow the same criteria as in point C.1, with appropriate spaces and preserving the aesthetic theme established for the unit, in order to maintain the coherence of the project.

C.2.1. Appropriate furniture (for rest and for work)

- For work: furniture appropriate to the work to be performed (following the principles of safety and ergonomics), taking into account the environmental factors of light, temperature and noise, and creating a comfortable, functional,

friendly and aesthetic environment. The same guidelines established in point C.1 are applicable. Appropriate spaces.

- For rest: room with natural light and blinds to control the entry of light and allow sleep. Full beds with side tables to leave glasses, bleeps, phones, etc. Light sources for each bed with light adjustment, and temperature control. Rooms should be equipped with sufficient linen. There should be noise control through sound-absorbent materials and noise-isolating doors and windows. Personalisation of the space, noticeboards to hang photos of family and friends, posters, drawings by children, etc.

C.2.2. Adequate communication facilities

A direct line phone, as a minimum

C.2.3. Complete bathrooms

Equipped with showers and mechanical ventilation systems, segregated by sex.

C.2.4. Lockers to leave personal possessions

D. FAMILY AREA

D.1. Signposting

Appropriate and visible signposting of rooms, indicating access routes, and maintaining the aesthetic design established in the unit. *(See: A.1.3. Ensure privacy)*

D.2. Waiting rooms-Living rooms

Like the patient and staff areas, the family area will be a space where care will be taken to ensure proper distribution, circulation, functionality, aesthetics and comfort.
See A) patients' area, B) treatment area and C) administrative and staff area.
Ensure "living rooms" instead of "waiting rooms".
Substitute cold, depersonalised rooms for welcoming, friendly and warm spaces, thus creating a homely atmosphere. In this way the family will feel welcomed and their stress levels will be lowered
Attempts must be made to make these spaces dynamic so that relatives can be more integrated and involved, getting rid of the passive state often imposed upon them. One dynamic intervention could be to carry out the "ICU relatives school" in the room.
The waiting room must be equipped with:

- *Sufficient seating (1'5 – 2 chairs per ICU bed)*
- *Side tables and large table for group activities*
- *Toilets (segregated by sex) with disabled access*
- *Food and drinks dispensers*
- *Electric sockets to charge phones, tablets and mobile devices*
- *Wi-Fi connection*
- *Education material on the ICU and the medical centre*
- *Presence of a television to be discussed for each unit (educational programmes)*
- *Access to information-sharing rooms with professioals, which can be accessed without going through the waiting room.*

D.3. Appropriate furniture and privacy

The furniture installed in the family area must fulfil requirements of health and safety and ergonomics proposed for patients and staff. (See: A) PATIENTS' AREA and C) ADMINISTRATIVE AND STAFF AREA). We must ensure that each family can have "its space" to wait, reflect, rest, communicate with others…For this reason privacy must especially be taken into account. It is important to maintain communication policies in conditions of privacy, meaning it must be insisted that there exist an office dedicated to information-sharing, preferably with direct access from th waiting room.

D.4. 'Goodbye' room

A room where a terminal patient can be accompanied in conditions of privacy, without pressures of time or space, to enable the start of the healthy grieving process. This space should be conveniently signposted from the outside, in a quiet area, and prepared to contain: medicinal gases for the terminal stage, armchair, seats, friendly design and aesthetics, a small amount of accompanying material, such as books on bereavement, a single-use camera and box to collect memories. Natural light is recommended, as well as a visual connection with the outside world.
This room can omitted in the case of individual compartments with adequate furniture and conditions of privacy.

D.6. Rooms for relatives in highly critical situations

All ICUs should have a resting room for relatives of at least $20m^2$ for every 8 beds where relatives who spend long periods of time accompanying patients can rest, relax, entertain themselves and attend to personal hygiene. This room is especially important in PICUs and NICUs where parents accompany their children during the night and especially when parents or relatives have their home in another city or far from the hospital.
The "ICU open doors" policy must ensure adequate conditions. The rooms could have sofas, beds, lockers, telephones, etc. with the hospital taking responsibility for cleaning and laundry. A bathroom (segregated by sex) should be considered for personal hygiene.

E. SPECIFIC FEATURES OF NEONATAL ICUs (NICUs)

As stated in the European Charter for children in hospital (1986), the baby has *"the right to be accompanied by his/her parents, or by the person who substitutes them, the maximum time possible during his/her stay in hospital, not as passive spectators but as active elements in hospital life. (…)".*

Through respect at all times of the mother-baby unit, we ensure not only the creation of the parental bond, optimal care during admission, and reduction of the stay in hospital, but also increase parental security for the phase that follows the stay in hospital. And at the same time, this reduces patient readmissions and the possibility that the mother will suffer depression. For these reasons it is paramount that spaces are adjusted to these processes.

Specific characteristics for the planning of NICUs

1. **Specific patient characteristics**

   New-borns and small babies are especially vulnerable, are at a crucial stage in development and highly susceptible to the world around them. Their communication system is very different from that of adults (very few hospitals have implemented the NIDCAP

programme which focuses on 'deciphering' the language, and in so doing the needs, of the baby in order to be able to adjust and optimise in a personalised manner the healthcare treatments and processes).
With patients who are premature babies, especially in the case of severe prematurity, he/she has experienced an abrupt termination of the pregnancy and, therefore, of the natural in utero development process, and enters into the NICU with his/her body not yet fully formed.

Definition of the type of patient in the NICU:
It is accepted that the neonatal period, from the healthcare perspective, ranges from the first 28 days of life in in births brought to term, to 46 weeks of postmenstrual age in premature births. However, on occasions hospitalisation in the neonatal unit can extend longer than this period depending on the pathological condition and the size of the patient.

2. **Specific characteristics of the carer**
In the NICU mothers and fathers, far more than simply accompanying the patient, are rather his/her primary carers and are active elements within the Unit, assuming a great quantity of care duties, which in adult ICUs tend to be carried out by healthcare staff.
The mother as primary carer finds herself, furthermore, in an especially vulnerable state, and even more so when the recent labour and birth have not gone as expected, on both an emotional and a physical level. On many occasions the mother is also a patient and inmate, and can even by going through a postoperative process and everything that this entails. She therefore also needs to be cared for in a special way during her admission, in order to encourage her recovery. Thus, to the postpartum process is added the trauma of the baby's admission, sometimes after a difficult birth.

3. **Specific characteristics of the environment**
The atmosphere of the NICU must come as close as possible to an environment with intrauterine conditions. It is impossible to recreate these exactly, but integrating the mother (and the family) as primary and active carers and paying attention to environmental factors is an essential step.

Annexe IX. Limitation of life support treatment

Limitation of life support treatment (LLST), also known as adaptation of life support treatment, is the decision to restrict or remove therapeutic measures given the futility of these measures, once the inflexion point in the patient's progress and prognostic has been put into objective terms *(figure 1).*

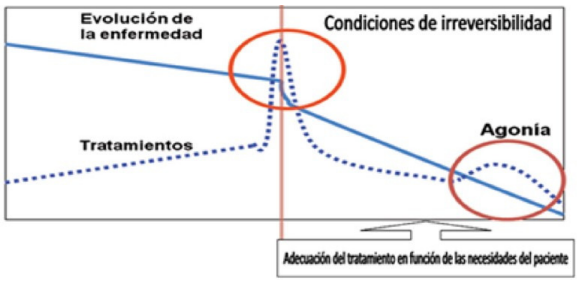

Figure 1: Identification of the inflexion point in the patient's progress and start of adaptation of treatment according to the patient's needs
Translation of terms used on graph:
Evolución de la enfermedad= Development of the illness
Tratamientos= Treatment
Condiciones de irreversibilidad= Conditions of irreversibility
Agonía= Agony
Adecuación de tratamiento en función de las necesidades del paciente= Adaptation of treatment according to patient's needs

LLST is considered an appropriate and necessary clinical practice. The term substitutes that of Limitation of Therapeutic Effort given that it is not limited to life support treatment or implies that the 'effort' to treat stops. The therapeutic goal is adapted or tailored to the person in question, and is therefore transferred to other clinical fields (sedation, analgesia, psychological support, care for the family, hygiene measures, etc.)

Basic principles of LLST

1. The LLST decision must be adapted to current medical knowledge, as far as possible in medicine based on scientific evidence. Before reasonable doubt, the practice of conditional intensive treatment is recommended.
2. Patients of sound mind have the right to accept or reject any treatment. For this reason, whenever possible, the wishes of the patient will be taken into account when LLST is established. When the patient is not of sound mind, LLST must take into account the existence of previously documented instructions (last will and testament) or the opinion of the representative, if one has been assigned. If these do not exist, the decision must be taken in relation to "substitutive judgement" or if this is not possible in "the patient's best interests". In the particular case of children, and considering article 9 of law 41/2002 (patient autonomy), the consent to or rejection of treatment is made on the patient's behalf up to 12 years of age. From 12 to 16 years of age by representation after hearing the minor's opinion-unless he/she has the intellectual and emotional capacity to understand the significance of the intervention, in which case the patient can decide for his/herself. Finally from age 16 onwards or in emancipated minors, consent will be made by the patient with attention to the same conditions as will the adult patient.
3. In cases of high-risk interventions, according to the criteria of the physician, the parents will be informed and their opinion taken into account when making the corresponding decision. When the decision is made on the patient's behalf this will "always be in the patient's best interests and respecting his/her personal dignity". In other words: their capacity to act, albeit not fully, is recognised.
4. The decision must be discussed collectively (doctors and nurses) and made as a consensus. In time-sensitive cases the LLST decision will have to be made on an individual basis, but it is recommended that it be discussed by the team afterwards. In case of doubt it is advised to begin or continue treatment without modifications.

5. Relatives or legal representatives must always be consulted with, in an attempt to reach an agreement with them in the sense of respecting the patient's wishes. Under no circumstances must the family be made responsible for making the decisions.
6. In case of lack of agreement between the parties involved (the healthcare professionals and/or family or legal representative), it is highly convenient to consider the recommendation of the centre's Committee for Healthcare Ethics, which will be in the clinical history.
7. Once the decision to omit or remove life support treatment, it is obligatory not to abandon the patient during the dying process, and guarantee him/her a dignified death with the appropriate palliative treatments.
8. The decisions to omit or remove life support treatment must show in the clinical history in a specific form that collects LLST orders.

Basic principles of bioethics

The basic principles of bioethics, which are those criteria that serve to support and justify ethical precepts and values in the biohealth field, support decision-making in the context of LLST. In summary, these are:

- ***Nonmaleficence:*** Keeping life support treatment in place without reasonable expectations of recovery can extend the patient's suffering and that of his/her relatives. For this reason, not everything that is technically possible will be necessary and ethically acceptable. All clinics have the clear obligation not to anything that is contraindicated. The problem is non-indication, which without reaching clear contraindication, is sometimes dubious.

- ***Justice:*** The assigning of resources, which are always scarce, to patients without well-founded expectations of survival can leave out patients in greater need of them, which could be an unfair action. This is the case, even if efforts to carry out a treatment are not contraindicated, especially if we are acting within a public system which cannot be obliged to provide or finance a treatment that is not indicated, or which is expensive or scarce, even if the patient demands it.

- ***Autonomy:*** What is beneficial for the patient should be defined by the patient through informed consent; in case of incapacity it should be defined by a last will and testament document, previous instructions, or even through the expression of his/her values and wishes as relayed through loved ones or a legal representative.
  - *Indication corresponds to the professional*
  - *Choice corresponds to the patient or his/her representative. In this last case the question to consider is not what the family thinks is best for the patient, but what the patient would want.*

  Respect for the exercising of the patient's autonomy has a number of implications for the doctor. He/she must:
  - *Give the patient all the relevant information so that he/she can make decisions with knowledge of cause.*
  - *Facilitate communication, using language that is easy to understand, and knowing how to listen with the attitude of wanting to understand the patient's situation, wishes and preferences.*
  - *Give information on the diagnosis, prognosis and resulting quality of life resulting from the proposed treatment unless the patient asks for this not to be done.*
  - *Present the different treatment alternatives impartially*
  - *Respect both confidentiality, and the promises or compromises made with the patient.*

- ***Beneficence:*** Life support measures are not always in the patient's "best interest", since it is only acceptable to undergo them if there are not useless and the expected benefit outweighs the discomfort and risk. In general, the analysis of the principle of nonmaleficence should be carried out in conjunction with that of beneficence, so that utility always prevails over harm in the decision made. For professionals who work with and for critical patients the requirement of beneficience/nonmaleficence has a number of implications, since it obliges them to:
  a. *Have rigorous and continuously updated theoretical and practical training in order to work in the profession*
  b. *Seek or investigate new diagnostic and therapeutic procedures and improve the existing ones to make them less invasive and painful for the patient*
  c. *Avoid what is called defensive medicine, not multiplying unnecessarily the diagnostic procedures.*
  d. *Cultivate an attitude that is conducive to a proper relationship with the patient.*

Acronyms. Initials

- ***AASTRE:*** Translates to: Random Security Checks in Real Time
- ***ACFV:*** Translates to: Adaptation of End-of-Life Care
- ***AEoLC:*** Adaptation of End-of-Life Care
- ***BIS:*** Bi-spectral Index
- ***CAA:*** Translates to: Augmentative-alternative communication
- ***CAPD:*** Cornell assessment Paediatric Delirium
- ***CAM-ICU:*** Confusion Assessment Method for Intensive Care Units
- ***CCD:*** Translates to: Family and development centred care
- ***CDPM:*** Translates to: Questionnaire on burnout in the medical professional
- ***CP:*** Translates to: Palliative Care (PC)
- ***CPR:*** Cardiopulmonary Resuscitation
- ***CRM:*** Crisis Resource Management
- ***EVA:*** Translates to: Visual Analogue Scale (VAS)
- ***EVN:*** Translates to: Verbal Numerical Rating Scale (VNS)
- ***ESCID:*** Translates to Behavioural Pain Assessment Scale
- ***HR:*** Human Resources
- ***HU-CI:*** Translates to: Humanisation of Intensive Care (project in question)
- ***ICDSC:*** Intensive Care Delirium Screening Checklist
- ***ICU:*** Intensive Care Unit
- ***LLST:*** Limitation of Life Support Treatment (in Spanish *LTSV*: *Limitación de Tratamiento Soporte Vital*)
- ***MV:*** Mechanical Ventilation
- ***NICU:*** Neonatal Intensive Care Unit
- ***NIDCAP:*** Newborn Individualised Developmental Care and Assessment Programme.
- ***PAED:*** Paediatric Anaesthesia Emergence Delirium Scale
- ***pCAM-ICU:*** Paediatric Confusion Assessment for Intensive Care Units
- ***PICS:*** Post-Intensive Care Syndrome
- ***PICU:*** Paediatric Intensive Care Unit
- ***RASS:*** Richmond Agitation-Sedation Scale
- ***RCP:*** Translates to: Cardiopulmonary resuscitation (CPR)
- ***RRHH:*** Translates to: Human Resources
- ***SAS:*** Sedation-Agitation Scale
- ***SBAR:*** Situation, Background, Assessment and Recommendation
- ***SEEIUC:*** *Sociedad Español de Medicina Intensiva, Crtítica y Unidades Coronarias* (Spanish Society of Intensive and Critical Medicine and Coronary Units)
- ***SIC:*** Translates to: Clinical Information Systems
- ***SMI:*** Translates to: Intensive Medicine Service
- ***VAS:*** Visual Analogue Scale
- ***VNRS:*** Verbal Numerical Rating Scale
- ***WHO:*** World Health Organisation

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