Critical Care Medicine represents one of the main components of modern healthcare systems. Its objective is to offer critical patients health care adapted to their needs, with good quality, and in the safest way possible, ensuring that it is adequate, sustainable, ethical, and respects patient autonomy.

Pharmacotherapy in critical patients is complex, and characterized by polypharmacy and high-risk drugs with intravenous administration, with frequent modifications. Besides, changes in distribution volumes will determine pharmacokinetics and pharmacodynamics. Therefore, given the severity and complexity of critical patients, there is a higher risk of suffering harm due to adverse events and medication errors. It is worth highlighting that the multicenter study SYREC “Safety and Risk in Critical Patients”, developed in Spain, showed a 62% likelihood of suffering at least one incident associated with safety, just by being hospitalized in an Intensive Care Unit (ICU), the most frequent were drug-related, and 90% of all incidents were classified as avoidable or potentially avoidable. Moreover, in a post hoc analysis, it was observed that there was a 22% risk of suffering a medication error while hospitalized in a ICU (IQR: 8%, 50%). The conclusion of said study was that 16% of medication errors will harm the patient, and 82% of these are avoidable.

In the setting of the multiple institutional initiatives for promoting safety patient, a great number of Scientific Societies have adopted the Declaration of Vienna, which confirms the commitment by professionals involved in critical patient care for an improvement in quality and safety of care. The World Health Organization (WHO) has implemented in 2017 the third challenge on Patient Safety: Safe Medication, with the objective to reduce by 50% those avoidable severe damages associated with drug-related adverse events within the next 5 years.

There is strong evidence supporting a multidisciplinary approach in ICUs in order to achieve quality care. In this sense, the review by Donovan et al. underlines the importance of each professional that can be a member of the ICU team. According to the Society of Critical Care Medicine (SCCM), ideal critical care includes a multidisciplinary team, and it is recommended to include a Pharmacist (Grade C of Recommendation). Different studies have shown the benefits of the presence of a Pharmacist in the ICU, in terms of a reduction in prescription errors and adverse events, reduction in hospital stay, reduction in drug-related costs (lower use of anesthetics and antibiotics), detection of drug-related errors, and sorting out questions by nurses and physicians. There are have been experiences in our country demonstrating that the presence of a Pharmacist in the ICU allows to detect areas for improvement and determine protocols to guarantee patient safety and the efficacy of pharmacological treatments, with a high rate of acceptance of these interventions by the rest of Intensive Care professionals. However, regardless of the evidence supporting the presence of a Pharmacist in the ICU, the truth is that in Spain there has been a low presence of the Pharmacist in said hospital units.

An international study based on a study to describe the activities conducted by Pharmacists in ICUs reached the conclusion that the Pharmacist is involved in a wide variety of activities: more than half of Pharmacists took part in medical visit rounds, and a small percentage was involved in the preparation of intravenous agents and parenteral nutrition. The positioning document prepared jointly by the SCCM and the American College of Clinical Pharmacy, with the objective to define the scope of action of Pharmacists in ICU, lists the activities that could or should be conducted by them, as well as their responsibilities.
Prescripción de medicamentos, compatibilidades y formulaciones.
- Manejo de la nutrición parenteral y enteral.
- Establecimiento de protocolos y guías para la práctica farmacotécnica.
- Capacitación de otros miembros del equipo.
- Minimización de costes relacionados con la medicación.

**Clinical Practice Guidelines** have recently been published, dealing with the safe use of medication in ICUs. These guidelines review the strategies that improve safety throughout the medication process (prescription, distribution, administration and monitoring), and the future areas for research in the critical patient setting. The safe use of medication, with the objective to reduce avoidable adverse events, requires a multimodal strategy, where the profile of the Pharmacist integrated in the multidisciplinary team will offer additional value. For this aim, collaborative strategies are necessary, where different disciplines and specialties will work proactively as a team, identifying the risks and offering the best patient care.

In this setting, a Collaboration Agreement has been signed between the Spanish Society of Intensive and Critical Medicine and Coronary Units (SEMICYUC) and the Spanish Society of Hospital Pharmacy (SEFH), which will be the setting for the development of common projects. Said agreement determines collaboration scenarios in the training and research areas, in the processes for guaranteeing professional quality, as well as in the patient care setting. This collaboration will allow to promote the safe use of medication in the critical patient, to implement recommendations and clinical practice guidelines, to delve into the epidemiology of drug-related events and adverse events, to develop projects on pharmacogenetics, pharmacodynamics and pharmaco-economics, and to promote specific competences through continuous training.

**Funding**

No funding.

**Conflict of interests**

No conflict of interests.

**Bibliography**

1. World Federation of Societies of Intensive and Critical Care Medicine, Fede-
   ración Panamericana e Iberica de Sociedades de Medicina Crítica y Terapia
   Intensiva, European Society of Intensive Care Medicine. Sociedad Española
   de Medicina Intensiva, Crítica y Unidades Coronarias. Sociedad de Rémolation
   de Langue Françoise. Santander Statement: Intensive Care Medicine. Patient-
   centered care for the critically ill [Monografía en internet] Santander, 11 de junio
   default/files/manifestosantiadical.pdf

2. Johansen ET, Stine MH, Ann SM, Iars MY. Effects of implementing a clinical phar-
   macist service in a mixed Norwegian ICU. Eur J Hosp Pharm. 2016;23(4):197-
   202. DOI: 10.1136/ejpharm-2015-000751

3. Merino P, Álvarez J, Cruz Martín M, Alonso A, Gutiérrez I. Adverse events in

   medicación en las services de Medicina Intensiva españolas. Rev Intensiva.


6. World Health Organization. Medication Without Harm - Global Patient Sa-
   Health Organization, 2017. Licence CC BY-NC-SA 3.0 IGO [citado
   1/06/2018]. Disponible en: http://apps.who.int/iris/bitstream/handle/
   /10665/235263/WHO-HIS-SDS-2017-eng.pdf;jsessionid=E03C4B928O
   4568A0B7A242335D97BE?sequence=1

7. Donovan AI, Aldrich JM, Grass AK, Barchas DM, Thornton KC, Schell-Chaple
   2018;46(6):980-90. DOI: 10.1097/CMM.0000000000003067

   Critical care delivery in the intensive care unit: defining clinical roles and the

9. Chant C, Dewhurst NF, Friedrich JO. Do we need a pharmacist in the ICU?

    et al. Onward participation of a hospital pharmacist in a Dutch intensive care
    unit reduces prescribing errors and related patient harm: an intervention study.

    et al. Impact of Quality Bundle Enforcement by a Critical Care Pharmacist
    on Patient Outcome and Costs. Crit Care Med. 2018;46(2):199-207. DOI:
    10.1097/CMM.0000000000002827

    Intensive Care: Generating Synergies. Med Intensiva (pendiente de publica-

13. LeBlanc JM, Seoane-Vazquez EC, Arbo TC, Dasta JF. International critical care
    hospital pharmacist activities. Intensive Care Med. 2008;34(3):538-42. DOI:
    10.1007/s00134-007-0918-2

    Society of Critical Care Medicine and American College of Clinical Phar-

    2017 Sep;45(9):e877-e915. DOI: 10.1097/CMM.0000000000002953