



EDITORIAL

Seizing opportunities and breaking barriers to ensure the transfer of knowledge based on better clinical evidence[☆]



Aprovechando oportunidades y rompiendo barreras para garantizar la traslación del conocimiento basado en la mejor evidencia clínica

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The main goal of intensive medicine professionals is to provide appropriate and timely care to patients, especially in the field of paediatrics, where patients have their whole lives ahead of them. To provide quality care to restore health and return the patient to a long and high-quality life.

However, despite significant advances in research—there are endless publications—there is a considerable gap between the evidence obtained in clinical research, which demonstrates the benefits of new therapeutic interventions (pharmacological treatment or life support techniques) and the actual impact in patient outcomes of the implementation of these interventions in everyday clinical practice.¹

This gap needs to be addressed, and as health care professionals we must strive to translate the highest-quality evidence from clinical research to the care provided at

the bedside of critically ill children and adolescents. We must give this issue the importance it actually has, and use any available technical and organisational resources, our knowledge and the methods at our disposal to ensure the translation of the results of the highest-level clinical research to everyday practice in paediatric intensive care.

In the past few years, there have been important advances in paediatric intensive medicine, both in diagnostic and monitoring methods and in treatment. Advances in less invasive multiparametric monitoring techniques (pulse oximetry, bispectral index and tissue oximetry, among others) are particularly important for the paediatric patient. The introduction of ultrasound has been a qualitative leap in terms of diagnostic speed and patient safety both in the short term (effectiveness and safety in placement of vascular access devices) and the long term (reduced exposure to ionising radiation). Mechanical ventilation is administered through ventilators that are accurate enough to adapt to the needs of the youngest patients, and techniques such as continuous veno-venous haemofiltration can be used appropriately in this subpopulation thanks to the availability of suitable monitoring devices, filters and catheters. The widespread use of non-invasive ventilation in children made

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possible by the combination of the increased sophistication of ventilators, on one hand, and the development of suitable face masks, on the other, has also transformed paediatric intensive care. Last of all, we should highlight the opportunities and the concerns, especially of an ethical nature, that the use of extracorporeal life support systems, such as extracorporeal membrane oxygenation, bring to our everyday practice.

The appropriate use of all the resources available to professionals to provide the best possible care to critical patients requires new frameworks and new roles² based on teamwork and effective communication and leadership. Making the necessary changes in the practice of intensive medicine can be facilitated by the development of strategies that help target and align efforts made in that direction. One example is the use of random real-time patient safety auditing as a tool to address and prevent errors of omission, especially those that keep patients from receiving care in adherence to evidence-based recommendations.³ Another contribution that has brought us one step further towards this new framework is the introduction of clinical information systems, which allow the collection, integration and storage of patient care data for a safer and more effective management. A skilled analysis of health care records can show how well we are doing things and whether we are using specific resources when they are actually indicated, and also which circumstances hinder the achievement of expected outcomes, even with appropriate treatment. There is hope that in upcoming years these systems will also provide a source of data for clinical research.⁴ In short, clinical information systems give us the opportunity to analyse processes and outcomes through data collected on a day-to-day basis, allowing an enhancement of clinical management, benchmarking and real-life studies.⁵

We must not forget that in health care in general and in intensive care in particular, resources are limited and costly. It is essential that ICU beds are allocated appropriately, but this is a complex and difficult to attain goal.

Anticipation is a characteristic aspect of our specialty. Delays in treatment have been associated with increased mortality, but the association with potential sequelae or recovery time has been overlooked, despite the impact they have on the child.

The recommendations for ICU admission, triage and discharge published in this issue of *Anales de Pediatría*⁶ provide a good starting point for the development of a model that ensures the translation of scientific knowledge and the delivery of timely and appropriate care.

Under the current circumstances, as we face the converging duties of providing the best possible care (translation of advances in research) in the most efficient possible manner (at the right time and place and with the appropriate duration) under relatively heterogeneous (but not inequitable)

conditions in terms of the distribution of resources (geographical distribution, health care administration, levels of hospital care) and the actual threats to the health and well-being of the population (emerging pandemics, terrorism), the publication of a consensus document for the essential criteria that must dictate admission to and discharge from the paediatric intensive care unit (PICU) and the selection of patients eligible for critical care is bound to become a key reference for all individuals responsible for the delivery of health care for the paediatric age group (administrators, managers, department chiefs, physicians and nurses).

The authors carried out the challenging task of providing a succinct schema of the "universe" of reasons that may warrant admission of a child to the PICU, without failing to emphasise the importance of adapting their recommendations to local circumstances and acknowledging the role of paediatric critical care specialists, who are ultimately responsible for assessing the circumstances of the patient, the family and the health care environment and make the best possible decision for each patient at any given time.

The application of triage principles in the PICU and the implementation of critical care outreach teams⁷ position this document at the vanguard of paediatric intensive medicine and in the course of the changes that we are to witness in upcoming years.

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