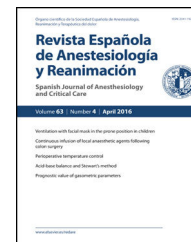




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LETTER TO THE DIRECTOR

Experience of a pediatric monographic hospital and strategies adopted for perioperative care during the SARS-CoV-2 epidemic and the reorganization of urgent pediatric care in the Community of Madrid, Spain[☆]



Experiencia de un hospital monográfico pediátrico y estrategias adoptadas para los cuidados perioperatorios durante la epidemia por SARS-CoV-2 y la reorganización de la atención pediátrica urgente en la Comunidad de Madrid. España

To the Editor,

COVID-19 is a highly contagious disease and a considerable burden for the health system both in terms of controlling the infection itself and treating other diseases. Spain, and specifically the Autonomous Community of Madrid, has experienced one of the highest rates of infection worldwide (up to 900 cases per 100,000 inhabitants).¹ On 20 March 2020, the Ministry of Health of the Community of Madrid reorganized the paediatric emergency, intensive care, and hospitalization system by centralizing the care of the region's 1,350,000 children ranging in age 0 to 18 years² in the La Paz University Hospital and the Niño Jesús University Children's Hospital.³ As we have seen, COVID-19 is an example of how emerging viral pandemics "can place extraordinary and sustained demands on public health and health systems and on providers of essential community services". Such demands will create the need to ration medical equipment and interventions.⁴ One of the first measures to be taken, therefore, is to devise a strategy for managing resource shortages.⁵

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- o *Preparation*: anticipate challenges, develop plans, stockpile materials.
- o *Conservation*: implement conservation strategies for existing, or foreseen, supply shortages to minimise the impact as far as possible (for example, determine "at risk" groups with priority to receive therapies in short supply, and implement general strategies to conserve the use of oxygen delivery devices or personal protective equipment).
- o *Substitution*: provide an equivalent or nearly equivalent drug or delivery device.
- o *Adaptation*: use equipment for other purposes (e.g. anaesthesia machine as a respirator).
- o *Reuse*: plan for the reuse of a wide variety of materials after proper disinfection or sterilization (may include oxygen delivery devices, for example).
- o *Reallocation*: if there are no alternatives, remove a resource from one area/patient and assign it to another with a higher probability of benefit (e.g. triage).

The characteristics of the SARS-CoV-2 virus, its mode of transmission, and clinical repercussions have compelled clinicians to apply these measures to both diagnostic (polymerase chain reaction testing with real-time reverse transcriptase; rRT-PCR, and serology) and therapeutic (drugs, respiratory support systems, hospital beds, critical care beds) resources, and individual protective equipment for healthcare personnel. The need to optimise resources is evident in all protocols (emergency care, hospital care, intensive care) including, of course, perioperative care protocols. All these protocols, given the recent emergence of the disease, need to be continuously developed, revised and updated. In the case of the Hospital Infantil Universitario Niño Jesús in Madrid, both the health alert following the outbreak of the SARS-CoV-2 epidemic and the reorganization of urgent paediatric care in the Community of Madrid, which doubled the number of daily surgical emergencies (compared to the same period in March and April 2018 and 2019), forced the hospital to phase in a series of measures based on current recommendations (Table 1). Data collection and analysis was also carried out on children undergoing any procedure in the operating room under general anaesthesia between 16 March and 26 April 2020. According to the Microbiology Service, during this period 5% of rRT-PCRs for SARS-CoV-2 performed in the hospital were positive. Of the 186 urgent procedures performed in the operating room during this period, a total of 144 underwent rRT-CRP test-

Table 1 Measures taken in the Surgical Block of the HIU Niño Jesús in response to the SARS-CoV-2 pandemic and the reorganization of urgent paediatric care in the Community of Madrid.

Recommendations	Person responsible	Measures taken
Planning: estimate the hospital's response capacity and coordinate with the rest of the network	Medical Director, Head of Continuity of Care	Daily meeting of the management team and heads of service
Bed management: increase availability of critical beds, reorganize emergency services	Medical Director, heads of Surgical, Emergency, Paediatrics, Intensive Care, and Anaesthesia services	Suspend scheduled non-urgent or prioritised surgical activity Reorganise urgent paediatric care in the Community of Madrid
Material resources: increased availability	Management	Strategies for resource shortages
Human Resources: work overload, multidisciplinary alliances, alternative organizational models	Medical Director, Head of Nursing, Heads of Surgical, Anaesthesia, Paediatric and Intensive Care services, Operating Room and Intensive Care Nursing supervisor	Optimise and adapt human resources as the pandemic evolves
Inefficiency of vertical solutions	Horizontal collaboration networks	Protection of healthcare personnel General surgical block measurements Perioperative management of paediatric patients
Demand exceeds supply: resources for patients who will benefit the most	Healthcare Ethics Committee	Ethical framework
Data: collection and analysis to define the problem and adapt the response	Medical Director, heads of Surgical, Emergency, Paediatrics, Intensive Care, and Anaesthesia services	Anaesthesia Service Database

ing, which was positive in 3 cases (2%). All patients made good progress. In addition, 2 other prioritised procedures were postponed due to positive rRT-CRP results. In the case of paediatric patient therefore, despite the reorganization of health emergencies, COVID-19 has not overburdened the capacity of the healthcare system. For example, we have fortunately not needed to develop protocols for adapting the level of care in accordance with ethical considerations and the recommendations drawn up by scientific societies, as has been the case in adult patients. Although direct morbidity and mortality from COVID-19 is low in the paediatric population, the indirect impact of health system saturation on the care of urgent and non-urgent cases and chronically ill patients has yet to be determined. Finally, we must not forget the possible effects on health personnel exposed to infection and extreme professional and working conditions.

The accumulated experience should help us maintain the measures for the perioperative management of COVID-19 patients, and to develop the concept of transversal and horizontal perioperative patient care: coordination and collaboration between the governing bodies and the medical, surgical and nursing personnel involved. Many have said that this pandemic has changed our lives, and without a doubt it will also change medical practice.

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E. Martínez García*, P. del Rey de Diego,
C. Tormo de las Heras, P. Catalán Escudero

Servicio de Anestesia y Reanimación, HIU Niño Jesús, Madrid, Spain

* Corresponding author.
E-mail address: ernesmg2002@yahoo.es
(E. Martínez García).