

Processes for the conversion of a major ambulatory surgery unit into an intensive care unit due to the COVID-19 syndemic. Cross-sectional study

Procesos para la conversión de una unidad de cirugía mayor ambulatoria en unidad de cuidados intensivos debido a la pandemia por COVID-19. Estudio transversal

Ignacio A. Gemio-del Rey^{1,2*}, Antonio García-Blanco³, Beatriz Pérez-López⁴, Cristina Sabater-Maroto⁵, Antonio Sanz-Villaverde⁶, and Roberto de la Plaza-Llamas^{1,2}

¹General and Digestive Surgery Service, Hospital Universitario de Guadalajara, Guadalajara; ²Department of Surgery, Ciencias Médicas y Sociales, Universidad de Alcalá, Alcalá de Henares, Madrid; ³General Services and Supplies, Secretaría General del Servicio de Salud de Castilla-La Mancha, Toledo; ⁴Management Directorate, Hospital Universitario de Guadalajara, Guadalajara; ⁵Medical Directorate, Hospital Universitario de Guadalajara, Guadalajara; ⁶Management Directorate, Hospital Universitario de Guadalajara, Guadalajara. Spain

Abstract

Objective: COVID-19 pandemic produced a deficit situation of intensive care units (ICU) beds. To optimize resources, the post-anesthetic resuscitation units and operating rooms were initially used in order to care for these patients, due to their equipment and personnel. This meant a significant surgical suspension. To avoid this, during the second wave, our hospital transformed the major ambulatory surgery unit into a critical care unit. The main objective is to develop the processes carried out in our hospital for this adaptation. **Method:** Cross-sectional study developed according to STROBE that exposes the processes carried out for this transformation. We include logistical adaptations, number of patients attended/stays won and the staff with which the unit was equipped. The information was provided by management and the admission and clinical documentation service. Improvement surveys are included. **Results:** A total of 44 patients undergoing mechanical ventilation without cessation of surgical activity were achieved at the time of maximum occupancy. The total number of stays won from 01/03/2020 to 31/12/2020 was 755. **Conclusions:** The transformation of the major ambulatory surgery unit into an ICU quickly increased the capacity of critical care beds without relenting surgical activity. This transformation process is completely reversible.

Keywords: Major ambulatory surgery unit. Conversion. Intensive care unit. Pandemic. COVID-19.

Resumen

Objetivo: La pandemia por COVID-19 produjo un déficit de camas en las unidades de cuidados intensivos (UCI). Para optimizar recursos, se utilizaron inicialmente, dada su equipación y personal, las unidades de reanimación posanestésica y los quirófanos, lo que supuso una gran suspensión quirúrgica. Para evitarlo, durante la segunda ola nuestro hospital transformó la unidad de cirugía mayor ambulatoria en una unidad de cuidados críticos. El objetivo principal es desarrollar los procesos llevados a cabo en nuestro hospital para dicha adaptación. **Método:** Estudio transversal desarrollado según STROBE que expone los procesos para dicha transformación. Incluimos las adaptaciones logísticas, el número de pacientes atendidos/estancias ganadas y el personal del que fue dotada la unidad. La información fue facilitada por la gerencia y por el servicio de admisión y documentación clínica. Se incluyen encuestas de mejora. **Resultados:** Se consiguió, en el momento de máxima ocupación, un total de 44 pacientes sometidos a ventilación mecánica sin el cese de la actividad quirúrgica. Las estancias

*Correspondence:

Ignacio A. Gemio-del Rey
E-mail: ignaciogemio87@gmail.com
2444-0507/© 2023 Academia Mexicana de Cirugía. Published by Permanyer. This is an open access article under the terms of the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Date of reception: 16-08-2023
Date of acceptance: 08-11-2023
DOI: 10.24875/CIRUE.M23000849

Cir Cir (Eng). 2025;93(3):288-297
Contents available at PubMed
www.cirugiaycirujanos.com

ganadas desde el 01-03-2020 hasta el 31-12-2020 fueron 755. **Conclusiones:** La transformación de la unidad de cirugía mayor ambulatoria en UCI consiguió de manera rápida aumentar la capacidad de camas de críticos sin cesar la actividad quirúrgica. Este proceso de transformación es completamente reversible.

Palabras clave: Unidad de cirugía mayor ambulatoria. Conversión. Unidad de cuidados intensivos. Pandemia. COVID-19.

Introduction

The COVID-19 pandemic led to an unprecedented modification of hospital needs. The greatest deficit situation arose due to a very significant increase in bed occupancy, especially beds for critical patients in intensive care units (ICUs), which are very limited. In Spain, as of May 19th, 2023, 13,868,227 cases had been confirmed by positive test according to the Spanish Ministry of Health¹, with a total of 121,213 deaths being reported¹. According to the Spanish Ministry of Health, 675,975 people required hospitalization and 55,959 were admitted to the ICU². As of December 30th, 2020, at the end of the first year of the pandemic, the total number of hospitalized COVID-19 patients in Spain amounted to 11,905, representing 9.80% of total bed occupancy³. Patients with COVID-19 admitted to the ICU amounted to 2035, representing an ICU bed occupancy of 21.34%³. All of this forced significant adaptations, both structural and in health care personnel.

The initial trend to optimize resources and quickly fill the lack of ICU beds was to use those areas of the hospital that, due to their primary purpose, had adequate provision of both equipment (ventilators, monitors, etc.) and health care personnel (workers who manage patients in critical situations, requiring monitoring, orotracheal intubation, or use of inotropic drugs or other vasoactive drugs). The areas that initially met these requirements and were used at the beginning were mainly post-anesthesia recovery units (PARUs) and operating rooms themselves, as well as their staff.

All of this allowed an increase, with the previously defined criteria, in the number of ICU beds, although in most cases it meant a reduction or the disappearance of other processes that required these spaces, such as scheduled or elective surgery.

In surgical services, such a redistribution of resources led to the disappearance of a significant number of operating rooms and PARU beds to care for patients in immediate postoperative recovery. This situation forced a significant suspension of surgical

activity in most centers worldwide⁴⁻⁸, often relegated to urgent and non-delayable surgery.

Therefore, the situation forced a significant reduction in the number of pathologies that, due to their characteristics, were eligible to be treated in major ambulatory surgery units (MASUs), which were practically unused.

Since no real improvement in the COVID-19 pandemic was foreseen in the short term, it became necessary to propose alternatives that would allow continuing to care for the significant load of patients requiring ICU without causing a serious cessation of surgical activity.

During the first wave of the pandemic, in March and April 2020, due to the initial lack of foresight because of its unexpected nature, new ICU beds were improvised at *Hospital Universitario de Guadalajara* (HUG) using PARUs, as well as its operating rooms, to provide coverage for critical patients. The MASU was closed due to the cessation of scheduled surgical activity and was used with newly acquired ventilators for critical patient care, but without adequate adaptation of the facilities due to the unexpected overload of the system.

Because of this, HUG Integrated Care Management (GAI) of the Health Service of Castile-La Mancha, and in anticipation of the arrival of a second wave of the pandemic, decided to carry out a series of processes to transform the MASU into an ICU in a regulated manner, and thereby provide coverage for the need for critical care beds, with the use of operating rooms and PARUs for this purpose becoming a last resort, thus avoiding the total blockage that occurred during March and April 2020 in surgical activity. This would allow attending to critical patients, increasing the available operating rooms and, therefore, increasing the number of pathologies attended and procedures that could be performed.

The primary endpoints is to develop the processes carried out in the HUG GAI for the adaptation of the MASU into an ICU to cover the urgent need for critical care beds created by COVID-19. Our secondary endpoints are:

- Analysis of results: patients attended and stays achieved.
- Analysis of deficiencies observed by unit managers and assigned professionals.
- Improvement measures for adaptation, in the specific case studied.
- To propose basic provisions for MASUs that allow conversion in a short period of time in the face of a similar health crisis.

Method

Study design

We conducted a cross-sectional study designed following the STROBE statement checklist elements^{9,10}. The processes conducted by the GAI of Guadalajara for the transformation of the MASU into an ICU were studied. Two periods of data collection are distinguished: the first, from March 20th, 2020, the date on which the first critical patients were received in the MASU, until May 11th, 2020, when it was closed due to the reduction in the number of admissions; the second runs from September 1st, 2020 through December 31st, 2020, a period of reopening after the scheduled restructuring for the adaptation of the facilities due to the high probability of a second wave.

Participants

All patients treated in the new ICU after the transformation of the MASU from March 20th, 2020, to December 31st, 2020, were included, without exclusion criteria. To recruit them, all information was requested from the admissions department.

On the other hand, management personnel who planned the transformation process, health care personnel displaced for this purpose, and hospital management were included for coordination data.

Ethical aspects that should be highlighted:

- For the realization of the present work, the consent of the HUG management direction was obtained.
- Interviews conducted with health care and management personnel who participated in both the transformation of the MASU and its operation as an ICU were anonymous and intended solely and exclusively for the improvement of the project.

- Data on MASU use did not include patient information and were obtained with permission from the admissions and clinical documentation service.
- Since no patient data appeared, the request for authorization from the Ethics Committee for Research with Medicines was not considered.

Variables

All adaptations or logistical modifications conducted by the GAI management area of the HUG for the transformation of the MASU into an ICU were developed. Information was requested regarding the material initially available and all that was subsequently associated for adaptation. The time needed for the transformation is included.

The number of patients who were attended was studied, divided into direct admissions to the ICU, received and emitted transfers, as well as the number of gained stays from the beginning of the MASU's activity as an ICU from March 20th, 2020 through December 31st, 2020, and an assessment of the increase in the total capacity of ICU beds. The number of deaths is included.

The necessary personnel with whom the new unit was staffed for its operation were collected.

Data sources

Information about the initial project for the adaptation of the MASU was requested from the HUG GAI. A sample of personnel from the adapted MASU was interviewed to obtain data regarding the defects and areas for improvement of the created unit.

Data on the number of patients and stays of the created unit were requested from the admissions and clinical documentation service.

Possible biases

This is a retrospective study, and therefore some of the process data and its costs may be lost.

Interviews were conducted with workers of the created unit and as direct interviews, so some negative aspects or deficiencies may not have been considered. To reduce bias, interviewees were informed that the data and opinions they provided would be handled anonymously.

Similarly, it is probable that the results obtained cannot be extrapolated to other centers, due to the idiosyncrasies of each one (external validation).

Table 1. Equipment of the MASU and changes for conversion into an ICU

Equipment	MASU (3/15/2020)	ICU conversion
Beds	12 + 1 armchair	10
Dialysis beds	None	2
Outlets	1 oxygen + 1 vacuum (x12)	1 oxygen + 1 vacuum (x2); 2 oxygen + 1 air + 2 vacuum (x8)
Electrical system	General hospital system	Increased number of outlets and power + connection to backup generator
Workstations	2 computers	4 computers+telemetry
Ventilators	None	S 1100® (x4); Aeonmed VG70® (x4); Dräger V680® (x10); Puritan Bennett®
Monitors	Nelcor (x4)	Philips Intellivue MP5® (x11)
Defibrillator	None	Lifepak 20e®
Nurses	3*	23 [†]
Nursing assistants	2*	16 [†]

*Distributed across 2 shifts (morning and afternoon).

[†]Shift distribution: four nurses in the morning, 3 in the afternoon, and 3 at night, Monday through Friday. On Saturdays, Sundays, and holidays, there are 3 nurses per shift. There are always 3 nursing assistants per shift.

Study size

For the present study, no sample size calculation was required, as all patients treated in the considered period were included. Likewise, all modifications made were incorporated.

Statistical methods

Data obtained from surveys conducted on the different parties involved in the transformation were compiled. Once incorporated, as part of the descriptive analysis, a variable distribution was performed. Depending on the type of variable, the analysis is presented as a proportion, rate, ratio, or average. Due to this, no missing data were observed in the variables analyzed.

Results

Prior to the start of the pandemic, the HUG MASU, as of March 15th, 2020, had 12 beds and 1 treatment chair, a family room, and changing rooms. Each bed had the equipment detailed in table 1.

The HUG ICU, as of March 15th, 2020, had 14 beds, 10 of which were operational. The available equipment is described in table 2.

With the onset of the first wave of the COVID-19 pandemic and the exponential increase in patients

needing critical care, the HUG GAI quickly decided to use the MASU as an ICU. The first patients were received on March 20th, 2020, marking the beginning of the first stage of the study.

To conduct this initial adaptation, ventilators from the PARU, ORs, and pre-hospital care were used, achieving a total of 44 patients on mechanical ventilation at the time of maximum occupancy.

The total number of patients treated during the study period is described in detail in table 3, broken down by month and service. As can be seen, the number of gained stays achieved with the initial adaptation of the MASU into an ICU was 153. None of the patients were excluded or did not participate in the study.

On May 11th, 2020, due to the reduction in the number of patients needing critical care, the unit was closed, and its activity as a MASU resumed until August 31st, 2020.

The second phase of the study begins after the first wave of the pandemic. The management of the GAI of Guadalajara decided to subject the hospital MASU to the necessary adaptations so that it could be transformed into an ICU quickly and efficiently in case of a second wave. The reform was conducted during July and August 2020, and due to the renewed need for bed expansion due to the exponential increase in the incidence of critical COVID-19 positive patients after

Table 2. Initial equipment of the ICU

Equipment	Initial ICU equipment (03/15/2020)
Beds	10
Outlets	2 oxygen+n1 air + 2 vacuum (x10)
Ventilators	Dräger Evita XL® (x2); Dräger Evita 2® (x2); Dräger Evita 4® (x2); Dräger Infinity®; Servo I® (x4); Philips V680® (x2)
Monitors	Philips Intellivue® (x14)
Nurses	33*
Nursing assistants	23*

*Shift distribution: 4 nurses in the morning, 3 in the afternoon, and 3 at night, Monday through Friday. On Saturdays, Sundays, and holidays, there are 3 nurses per shift. There are always 3 nursing assistants per shift

the summer, the MASU was reopened as an ICU on September 1st, 2020.

The changes made are shown in table 1. Noteworthy is the contribution made by the Strategic Reserve of Toledo, which included eight additional ventilators, the modification of the electrical installation, and the creation of two dialysis stations.

Therefore, after the reform, a total of 24 critical care beds were available, without considering at any time the PARU and operating room positions, which were fully occupied in the first wave of the pandemic.

The patients treated in this second phase of MASU use as an ICU (until December 31st, 2020) are shown in table 4. The gained stays during this second period amounted to 602. In this second phase, no patient was excluded either. With all of the above, the total gained stays from March 1st, 2020 through December 31st, 2020, achieved by the transformation of the MASU into an ICU, was 755.

On the other hand, as part of the reform conducted in the summer of 2020, the MASU waiting room was adapted to be used as a day hospital, because the old location was allocated to patients ineligible for ICU to be managed with non-invasive mechanical ventilation. Four of the 6 previously existing treatment posts were enabled to maintain adequate safety distance. In these treatment posts, medication from all hospital services was administered, except for oncology, hematology, and geriatrics, due to the complexity of these and their patients.

An improvement survey was conducted with five members of the new ICU, whose results are shown in table 5.

Discussion

The transformation of the MASU into an ICU at the HUG during the COVID-19 pandemic resulted in 755 gained stays in 2 periods: 153 in the first, with the provisional transformation, and 602 in the second, with the definitive transformation. This increase in gained stays allowed, fundamentally in the second period, the functional maintenance of the PARU and ORs, avoiding the cessation of surgical activity and an excessive increase in waiting lists.

Although all patients treated in the indicated period have been included, since this is a retrospective study, some of the process data may have been lost. On the other hand, interviews were conducted with a sample of workers from the created unit and through direct interview, so some negative aspects or deficiencies may not have been considered. To reduce biases, interviewees were informed that the data and opinions they provided would be handled anonymously. Similarly, it is probable that the results obtained cannot be extrapolated to other centers, due to the idiosyncrasies of each one (external validation).

Conclusions

Based on the data presented, we interpret that the transformation of a MASU into an ICU in a health care crisis situation allows, on the one hand, to offer greater coverage to the population, and on the other hand, with this increased coverage, to delay the occupation of PARUs and operating rooms with critical patients. This makes it possible to maintain surgical activity and, consequently, to reduce the waiting list.

Furthermore, once the adaptation has been conducted, should an increase in health care needs arise due to another event, the change could be made again quickly, efficiently, and effectively, implying an increase in ICU beds and the maintenance of surgical activity.

Table 3. Summary of patients treated in the MASU temporarily converted into an ICU during the first wave of the COVID-19 pandemic (March–May 2020)

March	Admissions	Transfers in	Transfers out	Stays	Deaths	April	Admissions	Transfers in	Transfers out	Stays	Deaths	May	Admissions	Transfers in	Transfers out	Stays	Deaths
Cardiology	0	0	0	0	0	Cardiology	0	0	0	0	0	Cardiology	0	0	0	0	0
General Surgery	0	0	0	0	0	General Surgery	0	0	0	0	0	General Surgery	0	0	0	0	0
Maxillofacial Surgery	0	0	0	0	0	Maxillofacial Surgery	0	0	0	0	0	Maxillofacial Surgery	0	0	0	0	0
Plastic Surgery	0	0	0	0	0	Plastic Surgery	0	0	0	0	0	Plastic Surgery	0	0	0	0	0
Vascular Surgery	0	0	0	0	0	Vascular Surgery	0	0	0	0	0	Vascular Surgery	0	0	0	0	0
Dermatology	0	0	0	0	0	Dermatology	0	0	0	0	0	Dermatology	0	0	0	0	0
Gastroenterology	0	0	0	0	0	Gastroenterology	0	0	0	0	0	Gastroenterology	0	0	0	0	0
Endocrinology	0	0	0	0	0	Endocrinology	0	0	0	0	0	Endocrinology	0	0	0	0	0
Acute Care	1	12	3	52	0	Acute Care	0	0	1	21	0	Acute Care	0	0	0	0	0
Gynecology	0	0	0	0	0	Gynecology	0	0	0	0	0	Gynecology	0	0	0	0	0
Hematology	0	0	0	0	0	Hematology	0	0	0	0	0	Hematology	0	0	0	0	0
Internal Medicine	1	4	4	9	1	Internal Medicine	0	0	0	1	0	Internal Medicine	0	0	0	0	0
Nephrology	0	0	0	0	0	Nephrology	0	0	0	0	0	Nephrology	0	0	0	0	0
Neonatology	0	0	0	0	0	Neonatology	0	0	0	0	0	Neonatology	0	0	0	0	0
Neurology	0	0	0	0	0	Neurology	0	0	0	0	0	Neurology	0	0	0	0	0
Ophthalmology	0	0	0	0	0	Ophthalmology	0	0	0	0	0	Ophthalmology	0	0	0	0	0
Oncology	0	0	0	0	0	Oncology	0	0	0	0	0	Oncology	0	0	0	0	0
Otolaryngology	0	0	0	0	0	Otolaryngology	0	0	0	0	0	Otolaryngology	0	0	0	0	0
Pediatrics	0	0	0	0	0	Pediatrics	0	0	0	0	0	Pediatrics	0	0	0	0	0
Psychiatry	0	0	0	0	0	Psychiatry	0	0	0	0	0	Psychiatry	0	0	0	0	0
Pulmonology	4	6	1	17	0	Pulmonology	0	0	0	0	0	Pulmonology	0	0	0	0	0
Rheumatology	0	0	0	0	0	Rheumatology	0	0	0	0	0	Rheumatology	0	0	0	0	0
Obstetrics	0	0	0	0	0	Obstetrics	0	0	0	0	0	Obstetrics	0	0	0	0	0

(Continues)

Table 3. Summary of patients treated in the MASU temporarily converted into an ICU during the first wave of the COVID-19 pandemic (March–May 2020) (continued)

March	Admissions	Transfers in	Transfers out	Stays	Deaths	April	Admissions	Transfers in	Transfers out	Stays	Deaths	May	Admissions	Transfers in	Transfers out	Stays	Deaths
Traumatology	0	0	0	0	0	Traumatology	0	0	0	0	0	Traumatology	0	0	0	0	0
Urology	0	0	0	0	0	Urology	0	0	0	0	0	Urology	0	0	0	0	0
ICU	0	6	7	12	0	ICU	0	2	4	38	0	ICU	0	3	3	3	0
Totals	6	28	15	90	1	Totals	1	2	5	60	0	Totals	0	3	3	3	0

Table 4. Summary of patients treated in the Major Ambulatory Surgery Unit (MASU) converted into an Intensive Care Unit (ICU) after the reform (September–December 2020)

September	Admissions	Transfers in	Transfers out	Stays	Deaths	October	Admissions	Transfers in	Transfers out	Stays	Deaths
Cardiology	0	0	1	0	0	Cardiology	0	0	0	0	0
General surgery	0	0	0	0	0	General surgery	0	1	0	0	0
Maxillofacial surgery	0	0	0	0	0	Maxillofacial surgery	0	0	0	0	0
Plastic surgery	0	0	0	0	0	Plastic surgery	0	0	0	0	0
Vascular surgery	0	1	0	0	0	Vascular surgery	0	1	1	0	0
Dermatology	0	0	0	0	0	Dermatology	0	0	0	0	0
Gastroenterology	0	0	0	0	0	Gastroenterology	0	0	0	0	0
Endocrinology	0	0	0	0	0	Endocrinology	0	0	0	0	0
Acute geriatrics	0	0	0	0	0	Acute geriatrics	0	0	0	0	0
Gynecology	0	0	0	0	0	Gynecology	0	0	0	0	0

(Continues)

Table 4. Summary of patients treated in the Major Ambulatory Surgery Unit (MASU) converted into an Intensive Care Unit (ICU) after the reform (September–December 2020) (continued)

September	Admissions	Transfers in	Transfers out	Stays	Deaths	October	Admissions	Transfers in	Transfers out	Stays	Deaths
Hematology	0	0	0	0	0	Hematology	0	0	0	0	0
Internal Medicine	0	0	0	0	1	Internal Medicine	0	0	0	0	0
Nephrology	0	0	0	0	0	Nephrology	0	0	0	0	0
Neonatology	0	0	0	0	0	Neonatology	0	0	0	0	0
Neurology	0	0	0	0	0	Neurology	0	0	0	0	0
Ophthalmology	0	0	0	0	0	Ophthalmology	0	0	0	0	0
Oncology	0	0	0	0	0	Oncology	0	0	0	0	0
Otolaryngology	0	0	0	0	0	Otolaryngology	0	0	0	0	0
Pediatrics	0	0	0	0	0	Pediatrics	0	0	0	0	0
Psychiatry	0	0	0	0	0	Psychiatry	0	0	0	0	0
Pulmonology	0	0	0	0	0	Pulmonology	0	0	0	0	0
Rheumatology	0	0	0	0	0	Rheumatology	0	0	0	0	0
Obstetrics	0	0	0	0	0	Obstetrics	0	0	0	0	0
Traumatology	0	0	0	0	0	Traumatology	0	0	0	0	0
Urology	0	0	0	0	0	Urology	0	0	0	0	0
ICU	17	9	18	104	0	ICU	19	6	30	128	0
Totals	17	10	19	104	1	Totals	19	8	31	128	0
November	Admissions	Transfers in	Transfers out	Stays	Deaths	December	Admissions	Transfers in	Transfers out	Stays	Deaths
Cardiology	0	0	0	0	0	Cardiology	0	0	0	0	0
General surgery	0	0	0	0	0	General surgery	0	0	0	0	0
Maxillofacial surgery	0	0	0	0	0	Maxillofacial surgery	0	0	0	0	0
Plastic surgery	0	0	0	0	0	Plastic surgery	0	0	0	0	0
Vascular surgery	0	1	0	0	0	Vascular surgery	0	0	0	0	0
Dermatology	0	0	0	0	0	Dermatology	0	0	0	0	0
Gastroenterology	0	1	0	0	0	Gastroenterology	0	0	0	0	0

(Continues)

Table 4. Summary of patients treated in the Major Ambulatory Surgery Unit (MASU) converted into an Intensive Care Unit (ICU) after the reform (September–December 2020) (continued)

November	Admissions	Transfers in	Transfers out	Stays	Deaths	December	Admissions	Transfers in	Transfers out	Stays	Deaths
Endocrinology	0	0	0	0	0	Endocrinology	0	0	0	0	0
Acute geriatrics	0	0	0	0	0	Acute geriatrics	0	0	0	0	0
Gynecology	0	0	0	0	0	Gynecology	0	0	0	0	0
Hematology	0	0	0	0	0	Hematology	0	0	0	0	0
Internal Medicine	0	0	0	0	6	Internal Medicine	0	0	1	0	5
Nephrology	0	0	0	0	0	Nephrology	0	0	0	0	0
Neonatology	0	0	0	0	0	Neonatology	0	0	0	0	0
Neurology	0	0	0	0	0	Neurology	0	0	0	0	0
Ophthalmology	0	0	0	0	0	Ophthalmology	0	0	0	0	0
Oncology	0	0	0	0	0	Oncology	0	0	0	0	0
Otolaryngology	0	0	0	0	0	Otolaryngology	0	0	0	0	0
Pediatrics	0	0	0	0	0	Pediatrics	0	0	0	0	0
Psychiatry	0	0	0	0	0	Psychiatry	0	0	0	0	0
Pulmonology	0	0	0	0	0	Pulmonology	0	1	0	0	1
Rheumatology	0	0	0	0	0	Rheumatology	0	0	0	0	0
Obstetrics	0	0	0	0	0	Obstetrics	0	0	0	0	0
Traumatology	0	0	0	0	0	Traumatology	0	0	0	0	0
Urology	0	0	0	0	0	Urology	0	0	0	0	0
ICU	25	16	30	171	0	ICU	33	11	37	199	0
Totals	25	18	30	171	6	Totals	33	12	38	199	6

Table 5. Survey results for improvement

The new monitors purchased for the 10 new beds in the former major outpatient surgery unit are small and fixed. For proper viewing, it is recommended that they be at least 19 inches.

For optimal operation, at least 10-20% more monitors and ventilators would be required.

With the new location, a surgical washing area should be designed that is suitable for performing sterile procedures, such as cannulation.

An increase in the number of dialysis beds available should be considered (there are only two adapted beds).

The storage area provided is not large enough for all the necessary equipment.

To maintain proper safety measures between patients admitted to an intensive care unit, adequate separation between them must be maintained, or they must be kept in properly isolated cubicles. Due to the need for space and to increase the number of beds, this separation is not possible in the adaptation of the major outpatient surgery unit, but it should be considered once the critical situation has passed.

Improve isolation areas between patients.

Funding

The authors declare not having received funding for this study.

Conflicts of interest

The authors declare no conflicts of interest.

Ethical considerations

Protection of people and animals. The authors declare that for this research no experiments on human beings or animals were carried out.

Confidentiality, informed consent, and ethical approval. The study does not involve personal patient data nor does it require ethical approval. SAGER guidelines do not apply.

Statement on the use of artificial intelligence. The authors declare that they did not use any type of generative artificial intelligence for the writing of this manuscript.

References

1. Ministerio de Sanidad. Actualización 669 COVID. [Internet]. 2023. (Consultado el 27-06-2023.) Disponible en: https://www.sanidad.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov/documentos/Actualizacion_669_COVID-19.pdf.
2. Ministerio de Sanidad. Informe 178: situación COVID-19 en España [Internet]. 2023 [consultado el 27 de junio de 2023]. Disponible en: <https://cne.isciii.es/documents/d/cne/informe-20n-c2-ba-20178-20situacion-c3-b3n-20actual-20de-20covid-19-20en-20espa-c3-b1a-20a-2019-20de-20mayo-20de-202023-pdf>
3. Ministerio de Sanidad. Actualización 281 COVID. [Internet]. 2020. (Consultado el 27-06-2023.) Disponible en: <https://www.mclibre.org/descargar/informatica/covid-19/covid-19-281-20201230.pdf>.
4. Poeran J, Zhong H, Wilson L, Liu J, Memtsoudis SG. Cancellation of elective surgery and intensive care unit capacity in New York State: a retrospective cohort analysis. *Anesth Analg*. 2020;131:1337-41.
5. Iacobucci G. COVID-19: all non-urgent elective surgery is suspended for at least three months in England. *BMJ*. 2020;368:m1106.
6. Poulouse BK, Phieffer LS, Mayerson J, Like D, Forrest LA, Rahmanian A, et al. Responsible return to essential and non-essential surgery during the COVID-19 pandemic. *J Gastrointest Surg*. 2021;25:1105-7.
7. Zarrintan S. Surgical operations during the COVID-19 outbreak: should elective surgeries be suspended? *Int J Surg*. 2020;78:5-6.
8. Burden EG, Walker RW, Ferguson DJ, Goubran AMF, Howell JR, John JB, et al. The provision of a time-critical elective surgical service during the COVID-19 crisis: a UK experience. *Ann R Coll Surg Engl*. 2021;103:173-9.
9. Vandembroucke JP, von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE). *Epidemiology*. 2007;18:805-35.
10. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandembroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Bull World Health Organ*. 2007;85:867-72.