



# SEMI-ANUAL REPORT 2023

DATA FROM JANUARY  
TO SEPTEMBER 2023

The functional and logistical assessment of a hospital is a complex phenomenon that requires the quantification of many medications, supplies, unit operations, human resources, and performance indicators. This task becomes even more complex when dealing with hospitals of different levels of complexity and diverse affiliations.

The National Hospital Survey, since 2014, has monitored the hospital situation through a series of indicators providing insight into the capacity of the public health system in Venezuela, focusing on its most important hospitals.

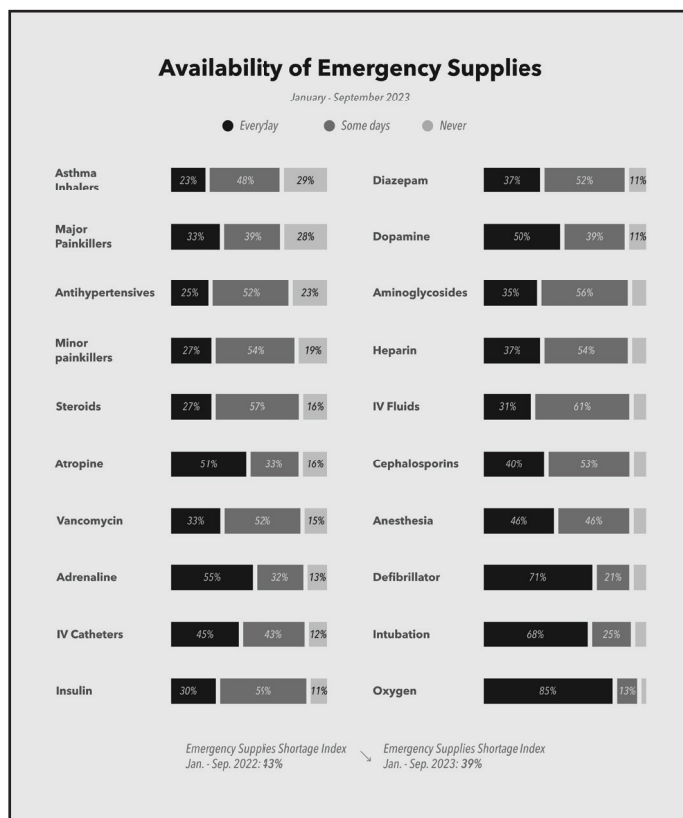
Starting from late 2018, the National Hospital Survey (ENH) adopted a weekly format that remains active, allowing for real-time information directly from the field. While many indicators have been part of the survey from the beginning, several others have been incorporated over the years. The ENH's role is to offer a temporal perspective on the indicators and answer simple questions: Is the situation in hospitals better or worse than in previous times? What areas require more effort to bring them to internationally acceptable standards?

Below, we present the results of our monitoring from January to September 2023.

## EMERGENCY SUPPLIES

The hospitals capacity for attention can be measured through various indicators. Still, the supply of critical supplies in areas such as emergency and operating rooms provides a good basis for understanding how prepared or equipped hospitals are, particularly those in the public health system in Venezuela.

The ENH calculates a shortage indicator based on 20 essential emergency supplies. The cumulative shortage until September 2023 showed a 39% shortage in these supplies. For the same period in 2022, the shortage index was 43%.



Graph 1. Availability of Emergency Supplies (Jan. - Sep. 2023)

As shown in the graph above, 29% of the monitored hospitals reported not having major analgesics or asthma inhalers on any day, and 23% reported not having antihypertensive medications on any day. However, when considering these three supplies and adding hospitals that reported having them intermittently, the data becomes alarming. 77% of the monitored hospitals do not have a constant supply of asthma inhalers, and 75% do not have antihypertensive medication regularly. This information alone indicates that the capacity of public health system hospitals is severely limited, especially for addressing critical conditions such as heart attacks.

## ATTENTION TIMES

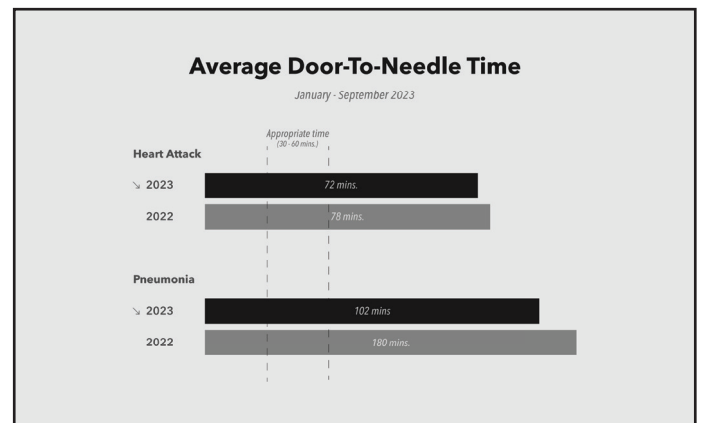
Understanding the supply situation in critical areas such as emergencies also allows us to contextualize other survey indicators, such as attention times. This indicator is based on what hospital management refers to as the "needle time," which is the time elapsed from when the patient arrives at the emergency room until the first medication is administered.

The ENH monitors only the attention times for heart attacks and pneumonia.

For the period January to September 2023, the average attention time for heart attacks is 2 hours and 12 minutes. Considering that for the same period in 2022, it was 2 hours and 18 minutes, we see that there has been no real variation in the capacity to attend to patients arriving with heart failure at hospital emergencies. Especially noteworthy is the high percentage of hospitals reporting not having antihypertensive medications regularly (75%).

In these cases, the usual occurrence is that the patient's relatives must leave the hospital to acquire the necessary medications, resulting in both a personal expense for treatment and a delay in treatment application.

For patients with pneumonia, the ENH recorded an average of 2 hours and 42 minutes for attention during the same period. The same timeframe in 2022 recorded an average of 3 hours.



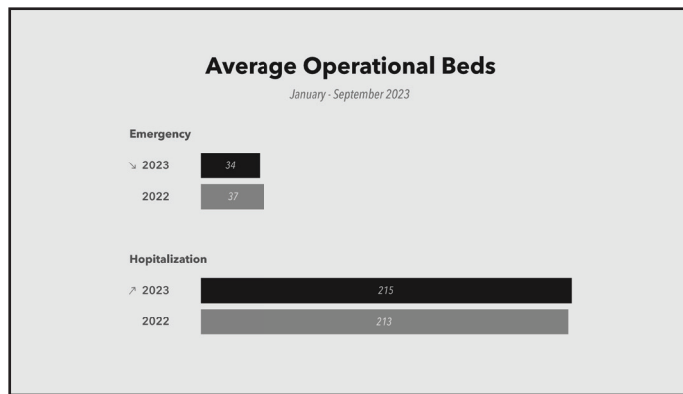
Graph 2. Average Door-to-Needle Time (Jan. - Sep. 2023)

## OPERATIONAL EMERGENCY BEDS

Another factor influencing patient care capacity, specifically in emergencies, is the number of operational beds. That is, not only the existing beds but those that are effectively ready for immediate use.

For the period January to September 2023, the average number of operational emergency beds per hospital is 34. Considering that for the same period in 2022, it was 37, we observe no significant variation.

Taking into account that the average number of operational hospitalization beds from January to September 2023 was 215.2, emergency beds represent 16% of the total operational beds nationwide.



Graph 3. Average Operational Beds (Jan. - Sep. 2023)

However, to delve into the importance of this indicator, it's essential to note that while there is no international standard for the number of operational emergency beds, as it depends on various variables, it is considered acceptable for between 10% and 15% of the total available beds to be designated for emergencies.

## STAFF

Additionally, the ENH monitors the health personnel available in hospital emergencies.

For the first half of 2023, there is an average of 14 residents, 9 specialists, and 14 nurses available during the daytime shift. These values have remained stable over the past 3 years, although there was an increase in personnel availability during the months of the pandemic, likely due to the mobilization of personnel. During 2023, it has remained at pre-pandemic levels.

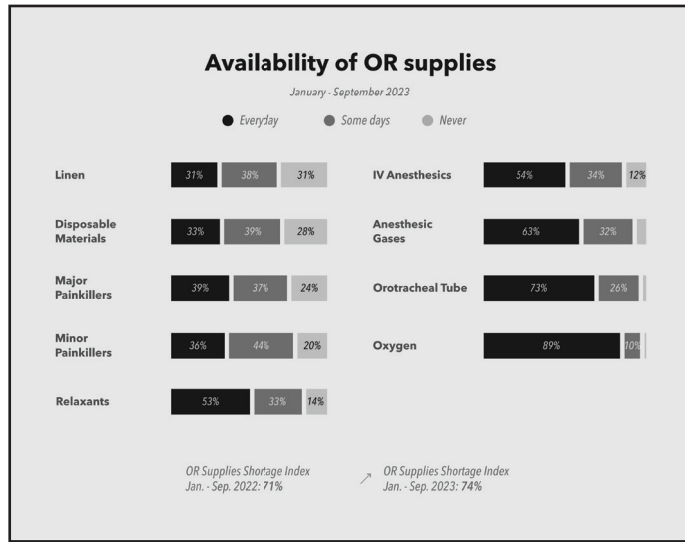


Graph 4. Average Available Staff (Jan. - Sep. 2023)

Comparing this information with the same period in 2022, there doesn't appear to be any significant variation. However, it's important to note that in these cases, the stability of indicators over time is not necessarily positive. In many of the indicators this survey monitors, the lack of improvement suggests a lack of real initiatives to enhance the care capacity of our health centers.

## SURGICAL SUPPLIES

Another critical area in which it is important to monitor the supply of supplies is in operating rooms, as they must address not only cases considered emergencies but also can perform elective surgeries—those that should not be performed urgently. Therefore, it is crucial to know which supplies are experiencing shortages.



Graph 5. Availability of OR Supplies (Jan. - Sep. 2023)

As observed in the graph above, the supply with the highest shortage is linens. This refers to the sheets on the beds and the special clothing that both patients and medical personnel entering the operating room must use.

Taking into account the number of hospitals that reported never having it and those that reported it intermittently, we find that almost 70% of hospitals report not having this supply regularly.

For the period January to September 2023, the shortage index for operating rooms, calculated based on 9 essential supplies, was 74%. When compared with the same period of the previous year, there is a 3% difference, with 2023 being worse than 2022.

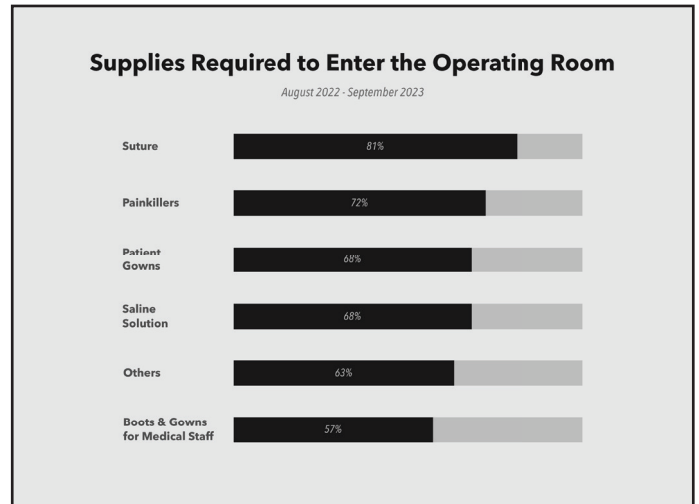
It is important to understand all this data in the hospital context and the Venezuelan reality. While we understand that a 74% shortage is a remarkably high figure, it is important to consider how this translates not only into the capacity of health centers but also into the quality of care received by patients.

This 74% shortage applies to all types of surgeries, both elective and for patients who need urgent intervention.

Therefore, the ENH has recently started to delve into some indicators that allow us to understand what this extremely high shortage index means for patients.

Ninety percent of the monitored hospitals reported that patients are asked for at least one supply to enter the operating room, regardless of whether it is an emergency or not.

In the graph above, we can see the percentage of hospitals that reported asking patients for these supplies to enter the operating room.



Graph 6. Supplies Required to Enter the OR (Aug. 2022. - Sep. 2023)

Given the high percentages of hospitals reporting asking for these supplies, we can infer that in some cases, all are requested. Considering an average of the costs of these supplies in Venezuela (see table below), it was estimated with updated data that a patient asked for all these supplies must pay approximately \$79 to be attended to (own calculations based on costs as of Sep 2023). This, being the most basic, as in many cases, specific supplies or instruments for the type of surgery may be requested, further increasing costs.

	Price (unit / Bs.)	Quantity	Total (Bs.)	Total (USD)*
Suture	133	3	399	11
Painkillers	68	4	272	8
Patient Gowns	57	1	57	2
Saline Solutions	93	5	465	13
Others**	797	1	797	23
Boots & Gowns for Medical Staff	192	4	768	22
<b>Total</b>			<b>1340</b>	<b>79</b>

\*Calculated by the exchange rate on 11/13/2023. VCB rate (35,3)      \*\*Gauze, adhesive, hydrogen peroxide, topical antiseptic (povidone)

Table 1. Supplies Required to Enter the OR: Price (Aug. - Sep. 2023)

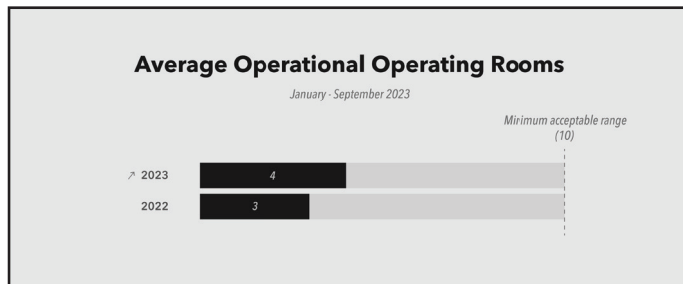
However, beyond the numerical cost of these supplies, it is important to remember that the public health system in Venezuela is free, so patients should not spend any-thing out of their own pockets to be attended to. Any cost assumed by the patient is inevitably evidence of the fail-ure of the health system.

## OPERATIONAL OPERATING ROOMS

The ENH monitors only type III and type IV hospitals. These categories refer to the largest hospitals with greater care capacity and a wider range of specialties. Therefore, they are mostly regional and even national reference hospitals.

While there is no international standard regarding the number of operating rooms a hospital should have, in the field of hospital management, it is understood that the range of 10 to 15 operational operating rooms is appropriate for hospitals of this size.

For the period January to September 2023, on average, the monitored hospitals have 4 operational operating rooms per health center, which contrasts with the architectural capacity of these hospitals, which is on average close to 10 operating rooms. This generates an inoperability index close to 60%.



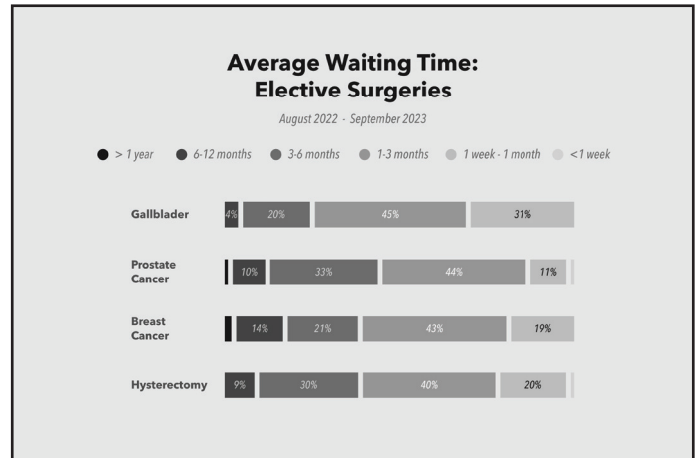
Graph 7. Average Operational OR (Jan. - Sep. 2023)

This places Venezuelan hospitals well below a measure that would indicate an appropriate surgical care capacity for regional capital hospitals.

This, combined with the extremely high shortage index, obviously affects the surgical capacity of public health system hospitals. Therefore, with such limited structural capacity and limitations in supplies, priority is given to emergency surgeries and elective surgeries are relegated to the background.

By September 2023, the average number of elective surgeries performed by monitored hospitals is 22 per week.

In this context, the ENH has recently begun to monitor the average waiting time for four different surgeries: prostate cancer surgeries, breast cancer surgeries, hysterectomies, and gallbladder surgeries.



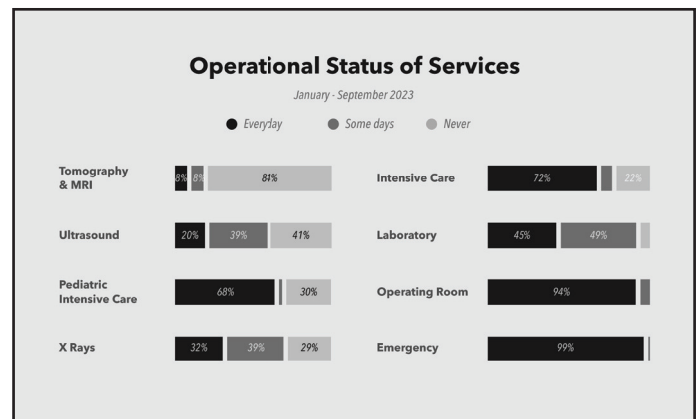
Graph 8. Ave. Waiting Times: Elective Surgeries (Aug. 2022 - Sep. 2023)

If we consider waiting times longer than three months, breast cancer surgeries have the longest waiting time, followed by prostate cancer surgeries. These data take on another meaning when we understand that beyond the time that patients have to wait, not having access to these surgeries when needed, but when possible, has a direct and especially negative effect on the development of their disease. The delay in surgery as a first-line surgical option leads to deterioration in the stage of the disease and a clear impact on survival. The long “waiting list” and extended waiting times are likely one of the most prevalent problems in healthcare today.

## OPERATIONALITY OF SERVICES

One of the indicators that the National Hospital Survey (ENH) has historically monitored is the operationality of various diagnostic support services.

These services enable and facilitate medical personnel to make more accurate diagnoses in the shortest possible time.



Graph 9. Operational Status of Services (Jan. - Sep. 2023)

Hospitals are ecosystems that require the interoperability of multiple units and factors simultaneously. On average, each patient needs 3 to 4 different services to carry out medical care. For example, a child with diarrhea and dehydration, a simple case, requires laboratory services, medical and paramedical personnel, and a pharmacy unit, even in a mild case. The more complex the case, the more services or units are needed.

These support services in a general hospital must operate 24 hours a day, 7 days a week, 365 days a year since patients in emergency conditions can arrive at any time.

For this reason, the evaluation of operability is strict; it is not enough for these services to operate during office hours or on weekdays. Due to the reasons mentioned, these services must be operational all the time.

Critical units such as emergency, operating rooms, and intensive care units have maintained their operability in the last 3 years, including the pandemic years. It should be clarified that operability means they are “open,” but this indicator does not speak to the quality or availability of supplies in that unit (see other indicators).

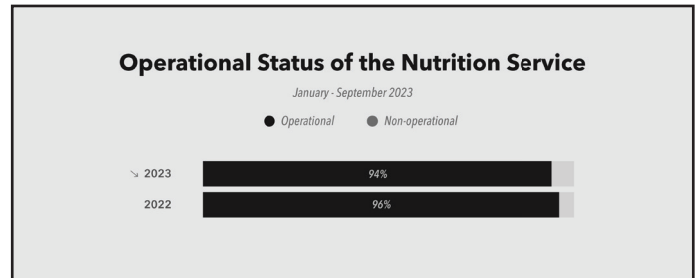
Support services such as radiology/tomography show an operability indicator that is not as bad as in previous years. An indicative measure for this indicator is the availability of tomography in the hospital, which until very recently was practically non-existent throughout the country, especially for emergency patients. Currently, 8% of tomography/MRI services are regularly available.

Other support services such as laboratory and X-rays remain at the same level of operability as in recent years; only 50% of laboratories are operational 24/7, and less than 30% for X-rays. Considering that these are the most in-demand hospital services, there is still a significant gap to reach acceptable values.

## NUTRITION SERVICE

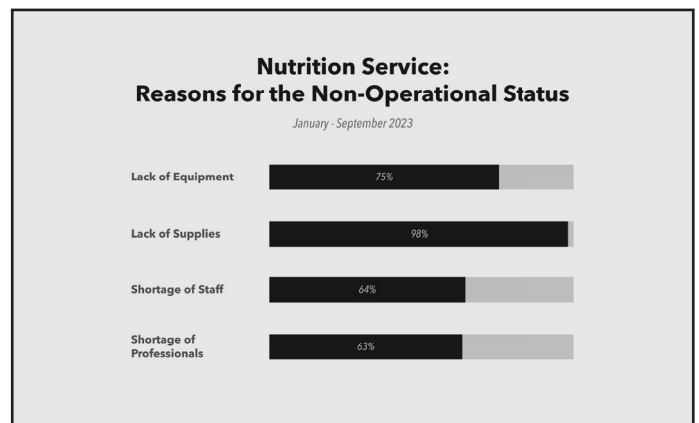
Hospital nutrition services have also been monitored by the ENH since 2018, and this is perhaps one of the services most affected by the humanitarian crisis in 2018 and 2019. The availability of food or easy access became a complex problem for the general population and therefore also for hospital services.

Despite a considerable improvement in the overall operability of services and the weekly service frequency, only 38% of hospitals can provide support on a daily and routine basis. This is one of the clear examples that, despite seeing a significant improvement in the indicator, there is still a normative gap.



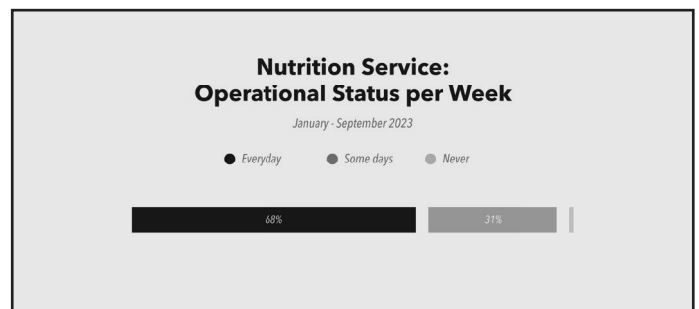
Graph 10. Operational Status of the Nutrition Service (Jan. - Sep. 2023)

Centers report that the most important reason for non-operability is the lack of supplies and equipment, reflecting how deteriorated this area was in previous years.



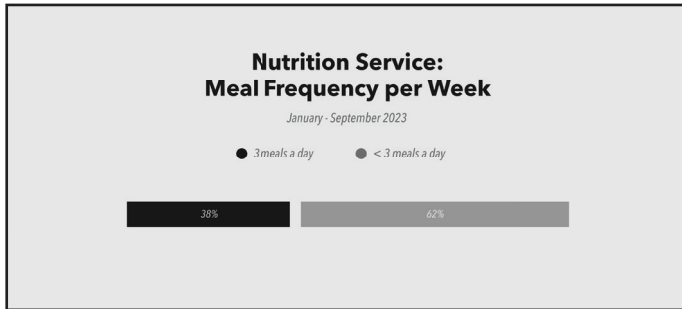
Graph 11. Nutrition Service: Reasons Non-Operational (Jan. - Sep. 2023)

Among the services that reported being open, 31% reported that the nutrition service operates intermittently during the week, meaning there are days when it does and others when it does not.



Graph 12. Nutrition Service: Oper. Status per Week (Jan. - Sep. 2023)

Additionally, 62% of monitored hospitals reported serving less than 3 meals a day. This means that although the service is open and operational, it does not cover the full nutritional needs of patients.

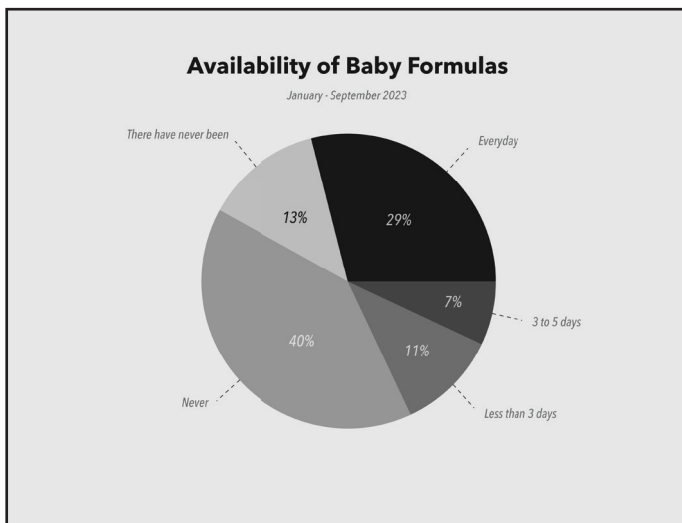


Graph 13. Nutrition Service: Meal Frequency per Week (Jan. - Sep. 2023)

From January to September 2023, 80% of monitored hospitals reported that the food provided by the nutrition service to patients does not comply with medical or nutritional recommendations for each hospitalized case. This means that most hospitals monitored by the ENH, despite having operational nutrition services, are offering poor service to patients.

It is crucial for the treatment that each patient receives adequate nutrition according to their medical requirements, and the reality is that today, hospitals in Venezuela do not have the capacity for this.

Another important indicator regarding the capacity of the nutrition service is the availability of milk formulas. While not all hospitals monitored by the ENH have pediatric services, of those that do, 40% reported not having milk formulas available.



Graph 14. Availability of Baby Formulas (Jan. - Sep. 2023)

The unavailability of food or milk formulas, along with the shortage of supplies, is not only evidence of the limited capacity of Venezuelan hospitals but also forces patients and their families to bear expenses that, given the country's economic context, likely exceed their purchasing capabilities.

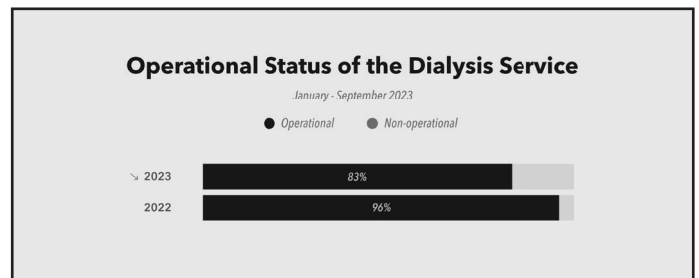
The fact that a patient's relatives must bring at least one meal to the hospital for the patient to be able to eat is enough to understand the magnitude of the current deficit in Venezuela's public health system.

### DIALYSIS SERVICE

Regarding dialysis units, the National Hospital Survey (ENH) has sought to give them importance due to multiple complaints in previous years.

It is important to note that the dialysis units monitored through this survey are strictly acute hospital dialysis units. These units are necessary for patients whose deterioration of renal function is acute or re-aggravated and requires immediate dialytic support, unlike external or outpatient dialysis units that are indicated for chronic renal failure support.

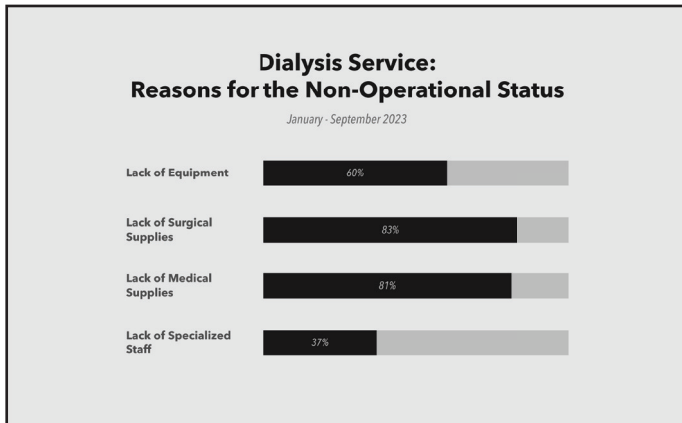
Taking this into account, for the period from January to September 2023, 17% of the hospitals monitored by the ENH that offer dialysis services reported that the service is not operational.



Graph 15. Operational Status of the Dialysis Service (Jan. - Sep. 2023)

Among the reasons why this service is not operational, most monitored hospitals reported that this is mainly due to a lack of supplies and surgical materials.



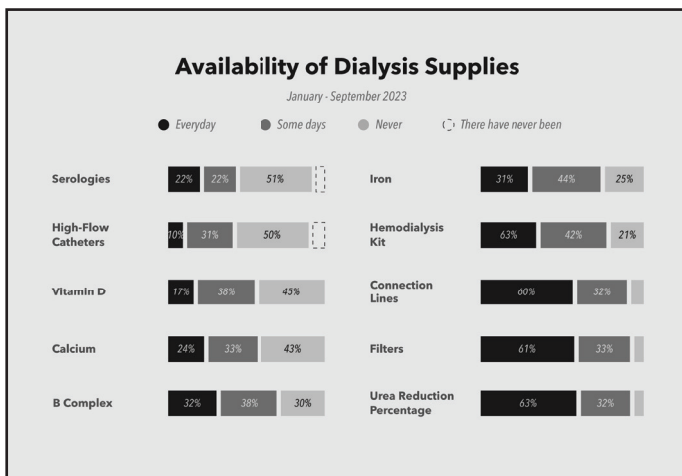


Graph 16. Dialysis Service: Reasons Non-Operational (Jan. - Sep. 2023)

If we delve into the supplies needed to perform dialysis, we find that high-flow catheters, as well as serologies, are the supplies that are most lacking in this service.

Without the presence of a catheter, it is almost impossible to perform dialysis. Additionally, this is a costly and difficult-to-access supply, so it is not easy for patients' relatives to obtain it on their own to carry out the treatment.

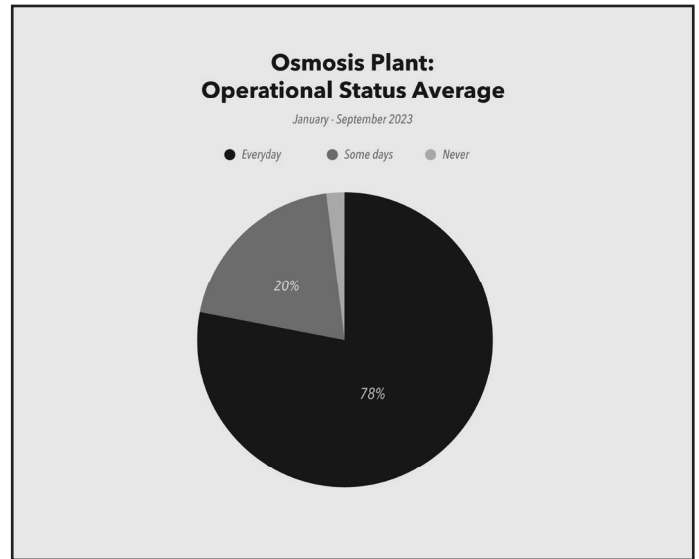
On the other hand, the unavailability of serologies endangers patients for the transmission of HIV, HCV, HBV, and others.



Graph 17. Dialysis Service: Availability of Supplies (Jan. - Sep. 2023)

It is essential to remember that dialysis procedures require not only access to water but also that the reverse osmosis plant, which is responsible for purifying water for dialysis treatments, is operational.

In this regard, between January and September 2023, 19% of the hospitals monitored by the ENH reported that their reverse osmosis plants function intermittently, meaning they do not operate every day, all the time.



Graph 18. Osmosis Plant: Operational Status Ave. (Jan. - Sep. 2023)

## PUBLIC SERVICES

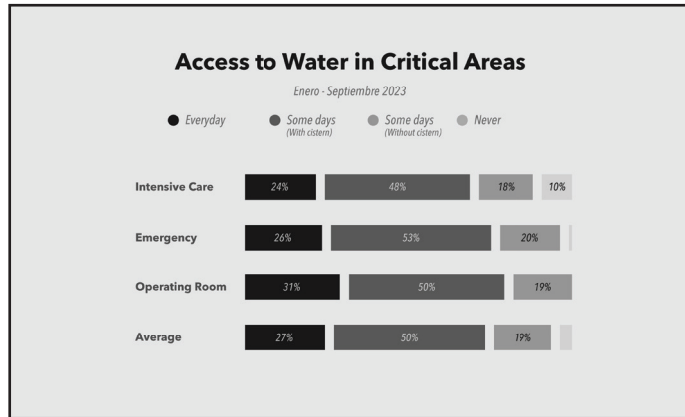
Understanding the importance of access to water and electricity for carrying out treatments and procedures, such as dialysis, in the hospital context, the National Hospital Survey (ENH) has systematically monitored the behavior of these services.

In this aspect, it is essential to always remember that the situation of hospitals does not escape the national context, much less the regional one. That is, the information collected from hospitals about access to basic services such as water and electricity is also evidence of the behavior of these services in the areas where these hospitals are located. Therefore, this indicator serves not only to understand the hospital situation but also the situation of communities throughout the national territory.

During the period from January to September 2023, 10% of the monitored hospitals reported not having water in the intensive care services any day of the week. Additionally, most hospitals reported intermittent service with the support of water tanks.

Perhaps one of the areas where there has been the least improvement in structural indicators is the availability of water in hospitals, despite various humanitarian organizations such as UNICEF, PAHO, and the International Red Cross, which have even intervened in some hospitals. Also, the implementation of WASH strategies, which not only involves restoring a water system but also its use and the impact of diseases associated with poor water quality. Still, our survey records that less than 30% of critical units report daily water presence, and more than 60% of hospitals have water only intermittently.

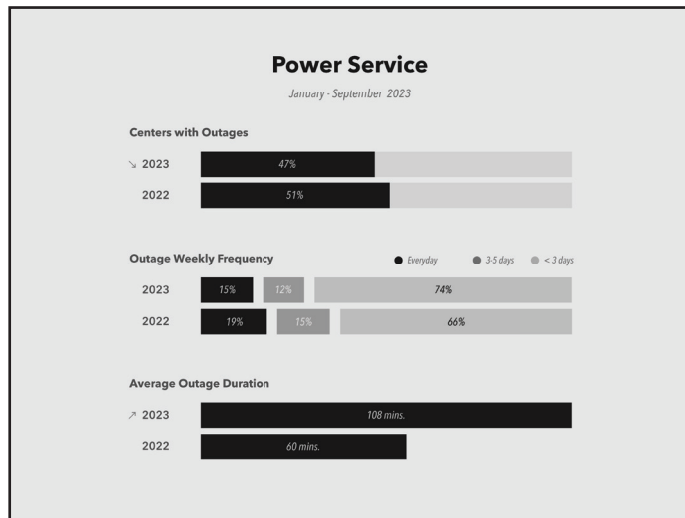
The absence of water in hospital centers results in high-cost events such as infections acquired in the hospital environment. It also implies an economic expense for relatives or patients to address the lack of water for basic needs.



Graph 19. Acces to Water in Critical Areas (Jan. - Sep. 2023)

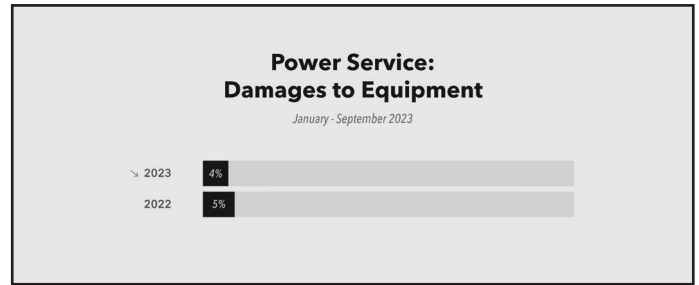
Regarding the electrical supply, during the same period, 47% of the monitored hospitals reported having experienced power outages at some point in the week. Of these, 15% reported having daily power outages.

If we compare these data with those of the same period in 2022, we find that while the number of hospitals and the number of days they experience electricity failures have decreased from January to September 2023, power outages have been longer than the previous year.



Graph 20. Power Service (Jan. - Sep. 2023)

Additionally, in this same period, 4% of the monitored centers reported damage to equipment attributable to fluctuations in the electrical service, and 9% of hospitals reported that the existing power plants did not work.

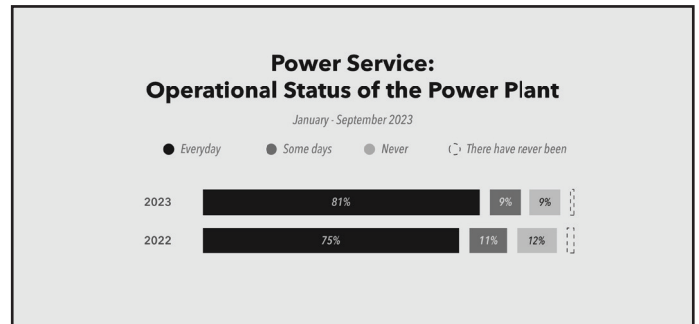


Graph 21. Power Service: Damages to Equipment (Jan. - Sep. 2023)

If we compare both indicators versus 2022, we see a slight improvement in both. However, it is always important to remember the electrical crisis that the country experienced in 2019 and how essential it is for all hospitals to have power plants operating at 100% to provide energy to critical areas in the event of electrical failures.

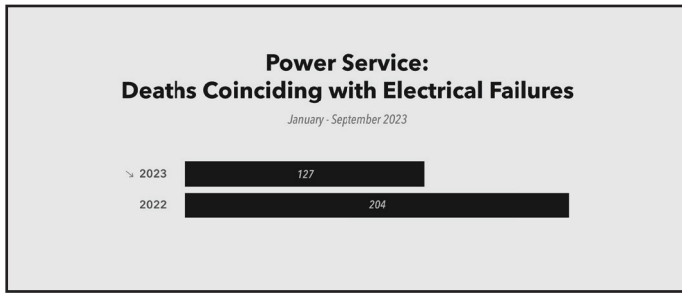
Also, at this point, it is important to note that after the 2019 electrical crisis, there was significant improvement in the operation of power plants. Still, our monitoring indicates that this indicator has progressively deteriorated. This is because, in 2019, the effort to improve the alternate electricity support situation in hospitals was largely an initiative of international and humanitarian organizations.

After almost 4 years, the deterioration of this indicator only shows that no maintenance has been implemented for the power plants in our health centers.



Graph 22. Power Service: Op. Status of Power Plant (Jan. - Sep. 2023)

Finally, it is important to understand these data in the context of how they affect patients and the capacity of health centers. From January to September 2023, a total of 127 deaths were attributed to electrical failures.



Graph 23. Power Service: Coinciding Deaths (Jan. - Sep. 2023)

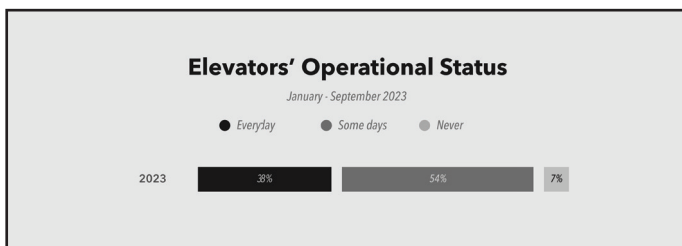
Other events that the ENH has incorporated to measure the impact of these infrastructure failures are deaths coinciding with electrical failures and damage to medical technology equipment following variations in the electrical supply; both have shown improvement when compared to 2022: deaths temporally associated with electrical failures 127 in the period January to September 2023, and 4% of hospitals reported equipment failures.

It is essential to remember that this indicator represents the number of deaths in monitored hospitals that coincided with a power failure.

## INFRASTRUCTURE

Another indicator recently incorporated into the ENH monitoring is related to hospital infrastructure, specifically the operation of air conditioning in critical areas and elevators.

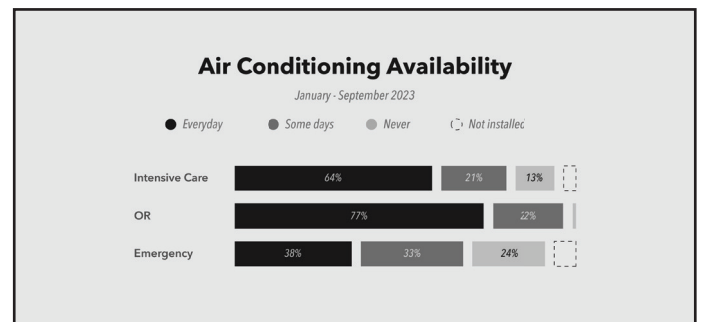
The importance of both elements in hospital life is significant. For example, if a patient needs to be moved from one floor to another for emergency intervention or a procedure and the elevator is not functioning, it is simply not possible to transport the patient, having a significant impact on their care.



Graph 24. Elevators' Operational Status (Jan. - Sep. 2023)

In this regard, 54% of the monitored hospitals report that elevators operate intermittently, and 7% report that elevators do not work. This means that the majority of hospitals monitored by this survey do not guarantee elevator operation at all times, limiting the capacity for effective patient care. Elevator failures are a recurrent phenomenon reflected in news reports on hospital care, especially considering that most hospitals in the country are vertically structured, and moving patients without an elevator is particularly complicated, especially in critical areas.

Regarding the availability of air conditioning, we find that emergency areas have the lowest availability of air conditioning. It is important to remember that air conditioning implies not only the comfort of the patient or healthcare personnel but also that hospitals should be antiseptic spaces where cleanliness standards should be extremely strict, and the entry of external agents should be avoided. Therefore, hospitals without air conditioning in some critical areas are vulnerable to external agents that can enter through windows, posing a risk to patients and even healthcare personnel.

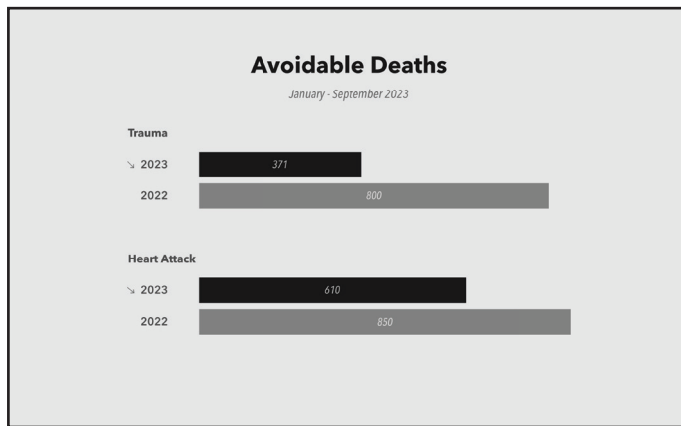


Graph 25. Air Conditioning Availability (Jan. - Sep. 2023)

## AVOIDABLE DEATHS

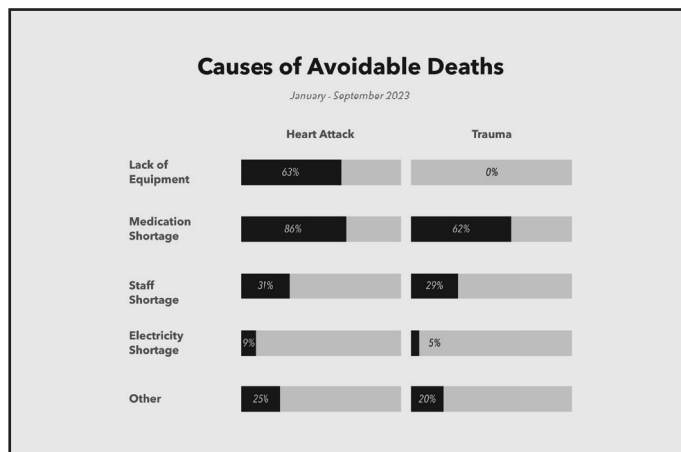
The shortcomings of the public health system in Venezuela unfortunately only have one consequence: the limitation of the capacity to attend to patients. In the worst-case scenario, these limitations result in deaths that could have been avoided if the healthcare system or hospitals were in optimal conditions.

In this sense, since 2018, the ENH has been monitoring the number of deaths that, according to the criteria of our field links, are due to institutional failures and that, had this failure not occurred, could have been avoided.



Graph 26. Avoidable Deaths (Jan. - Sep. 2023)

For the period January to September 2023, there is a total of 610 avoidable deaths due to heart attacks and 371 due to trauma. If we compare this with the same period in 2022, there is a significant decrease in these deaths.

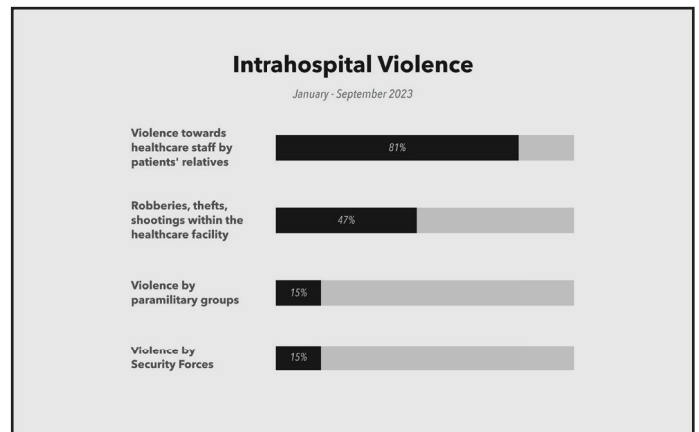


Graph 27. Causes of Avoidable Deaths (Jan. - Sep. 2023)

When we review the main causes of these avoidable deaths, the vast majority of hospitals reported that this was due to a lack of medications and equipment. This not only should raise alarms for the relevant authorities but also reaffirm the data presented in this bulletin regarding the deficiencies of the public health system.

## VIOLENCE

The ENH aims to monitor all elements that influence hospital life. Unfortunately, through our monitoring, we have learned that hospitals in Venezuela are not particularly safe spaces. Therefore, since 2018, we have been monitoring these events weekly to understand their nature.



Graph 28. Intrahospital Violence (Jan. - Sep. 2023)

For the period January to September 2023, more than 80% of health centers reported incidents of violence by patient's relatives towards healthcare personnel.

It is important to highlight the importance of the hospital context in Venezuela. As we have seen through all our indicators, hospitals in Venezuela today have significant shortcomings that, for the most part, patient's relatives must try to compensate for. This obviously has a negative impact on the patient and on the relatives who must deal not only with whatever the patient presents but also with the distress of not being able to afford a medication or a test so that they can be treated.

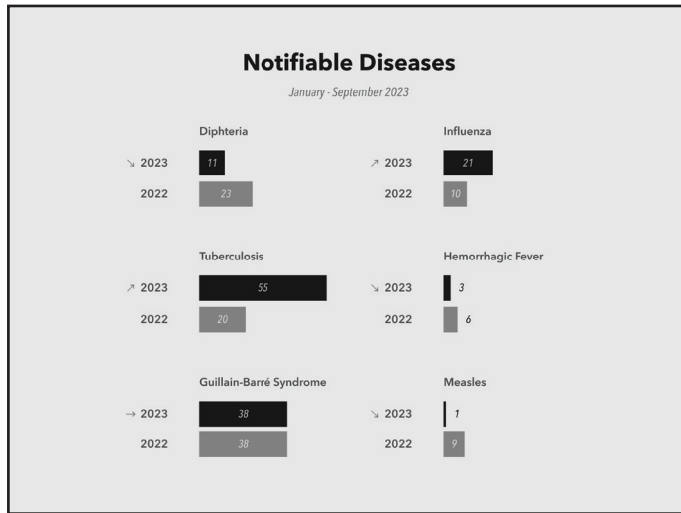
Without a doubt, this is not a justification for violence against healthcare personnel, but the context helps to explain why this is a situation that is regularly experienced in many health centers in the country.

Similarly, our monitoring recorded high percentages of thefts and robberies within the physical spaces of the hospital, as well as the presence and hostility of paramilitary and paramilitary groups.

## NOTIFIABLE DISEASES

Since 2016, the Ministry of Popular Power for Health has not issued an epidemiological bulletin. This means that there is no official information on the country's health situation, including information on notifiable diseases.

These diseases are those that health authorities in each country consider relevant to public health. Therefore, the ENH, through its on field collaborators, seeks to collect information of this kind. It is important to remember that in no way does this indicator seek to replace what would be an Epidemiological Bulletin, but it does allow us to get an idea of the behavior of these diseases in the country.



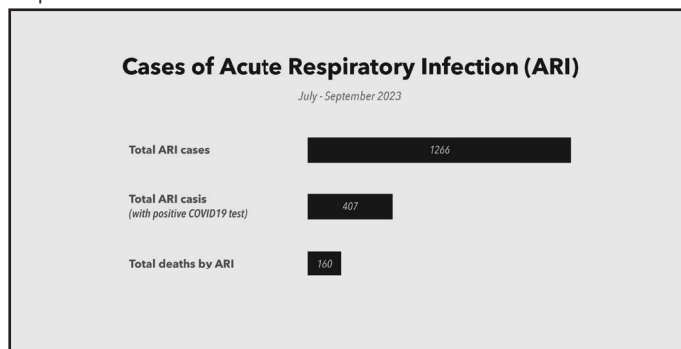
Graph 29. Notifiable Diseases (Jan. - Sep. 2023)

According to the data collected between January and September 2023, tuberculosis presented the highest number of cases among these diseases, followed by hemorrhagic fevers, mainly represented by Dengue in the last 3 months.

## ACUTE RESPIRATORY INFECTION (ARI)

We are in a period that is challenging to classify acute respiratory infections accurately, as there is evidence of significant circulation of influenza A in the last two months (August and September and some influenza B.

The fact of not having specific monitoring based on the real identification of pathogens generates epidemiological noise that is difficult to interpret. ARIs in hospitals can represent cases of various respiratory pathogens such as those mentioned and some others like respiratory syncytial virus. What is undeniable is that there is a recent increase in August and September.



Graph 30. Cases of ARI (Jan. - Sep. 2023)

## **SUMMARY**

While a significant number of survey indicators have presented a profile revealing some form of improvement or stabilization, almost none of the performance indicators are close to what would be a regional standard.

The gap between quality and quantity health management indicators remains significant. Achieving significant improvement in some of these indicators implies investments in infrastructure that are beyond purely hospital management, for example, in terms of water, electricity, and security, and are clearly outside the focus of humanitarian aid, at least from a conceptual point of view.

Some other indicators imply an improvement in specific logistical and supply lines that have had a long period of deficit beyond even the economic conjunctural aspects of the last 5 years or the pandemic.

The economic situation of recent years requires an exercise of focus or prioritization on the general policy of the health system in terms of investment and execution. Therefore, one of the objectives of the survey is to highlight critical areas from a temporal perspective that adds value to the technical and social discussion in the health sector.

To facilitate the understanding of data and indicators used throughout this bulletin, we will briefly explain some medical and technical terms:

### **Adrenaline**

Used to treat severe allergies, cardiac arrest, and acute respiratory problems.

### **Aminoglycosides**

Antibiotics used to treat severe bacterial infections.

### **Major Analgesics**

Potent medications for relieving intense pain, such as morphine.

### **Minor Analgesics**

Over-the-counter medications used to alleviate mild to moderate pain, such as ibuprofen or paracetamol.

### **Local Anesthesia**

Used to numb a specific part of the body during surgical procedures or to relieve localized pain.

### **Antihypertensives**

Medications to reduce high blood pressure and prevent cardiovascular problems.

### **Atropine**

Used to treat abnormal heart rhythms and certain poisonings.

### **Cephalosporins**

Antibiotics used to treat a variety of bacterial infections.

### **Defibrillator**

A device used to restore normal heart rhythm in the event of cardiac arrest.

### **Diazepam**

Used to treat seizures, anxiety, and relax tense muscles.

### **Dopamine**

Medication used to increase blood pressure in critical situations.

### **Steroids**

Used to reduce inflammation in various medical conditions.

### **Fluid Therapy**

Refers to fluids and solutions administered to maintain fluid and electrolyte balance in the body.

### **Heparin**

An anticoagulant used to prevent or treat blood clots.

### **Insulin**

Used to treat diabetes by helping control blood sugar levels.

### **Asthma Inhalers**

Devices that deliver medications to relieve asthma symptoms and improve breathing.

### **Oxygen**

Supplied to assist people with breathing difficulties.

### **Intubation**

A procedure in which a tube is inserted into the trachea to secure an airway and aid in breathing.

### **Vancomycin**

An antibiotic used to treat severe infections caused by bacteria resistant to other antibiotics.

### **Yelco**

Intravenous catheter used to administer fluids, medications, or draw blood from a vein.

### **IV (Intravenous) Anesthetics**

Substances administered through an intravenous route to induce loss of sensation or consciousness for pain-

less surgical procedures.

### **Disposable Materials**

Includes any equipment or materials used only once and discarded after use to prevent infections and maintain hygiene in the operating room.

### **Anesthetic Gases**

Inhalable substances used to induce and maintain anesthesia during surgery.

### **Sterile Garb**

Refers to the bedding and special attire used in the operating room to maintain asepsis and ensure optimal sanitary conditions during surgical interventions.

### **Oxygen**

An essential gas supplied in the operating room to ensure proper patient oxygenation during surgery and in the recovery phase.

### **Muscle Relaxants**

Medications administered during anesthesia to relax the patient's muscles and facilitate certain surgical procedures.

### **Endotracheal Tube**

A tubular device inserted through the mouth or nose into the trachea to secure an airway during general anesthesia and assist with patient ventilation during surgery.

### **Filters**

Also known as membranes or diaphragms, are critical in hemodialysis because they allow the separation of waste products and excess water from the blood, aiding in its purification.

### **Connection Lines**

Tubes that connect the patient to the hemodialysis machine, allowing blood to circulate to the filter and back to the patient.

### **Hemodialysis Kit**

Contains a variety of necessary elements for dialysis, such as syringes, solutions, and other materials used in the procedure.

### **Iron, B Complex, Calcium, and Zemplar**

These nutrients and medications are essential to ensure the proper balance of electrolytes and maintain the patient's health during hemodialysis. Iron is vital for preventing anemia common in patients with kidney failure.

### **High-Flow Cannulas**

Devices that allow adequate blood flow during hemodialysis, ensuring that blood flows correctly to and from the filter.

### **Serology Tests**

Blood tests to assess the presence of infections or communicable diseases that could affect the dialysis process or patient health.

### **Urea Reduction Ratio**

A crucial indicator that measures the effectiveness of treatment by evaluating the amount of urea (a waste product) removed during hemodialysis, helping determine if dialysis is effective.

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