

The quest for improving general and in hospital health care during COVID-19 pandemic

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Since January 2020 the COVID-19 pandemic has emerged as a serious public health problem (1), which -according to the 13 August 2021 WHO update- is burdened by 205.338.151 cases and 4.333.094 deaths (2).

In modern times, the first new pandemic was the HIV/AIDS infection, whose mortality peaked at around 2 million per year in 2004-2005, followed by a progressive decline, which in 2015 amounted to 45% of the peak (3). In the case of the HIV/AIDS pandemic, the most important factors in reducing mortality were attention to sexual behavior and the development of effective drugs, particularly the introduction of the antiretroviral therapy (4). However, as of today no treatment able to cure the disease has been discovered, thus making its length indefinite. The most powerful tool in preventing pandemics is vaccination, which was introduced by Jenner as early as 1798 for smallpox and in the following centuries has spread to all infectious diseases troubled with mortality, greatly reducing their mortality caused by them and increasing the average life span of the vaccinated subjects. Despite the many years that have passed since its appearance, HIV remains largely unresponsive to the various vaccines tested, even if in recent years new vaccine candidates, mainly employing innovative immunogen designs approaches, delivery methods, and adjuvant formulation, has shown promising results (5).

Unlike AIDS, COVID-19 vaccines, including mRNA, protein-based (which are the largest category), viral vector-based, nucleic acids based, inactivated virus, live attenuated virus and virus-like particles demonstrated to be effective, and many others are still

under development (6). Notwithstanding, the persistence of protection is limited in time, requiring further vaccine administration at intervals not yet established with certainty (7).

As the vaccination campaign continues, the rise of new variants still poses a threat for our healthcare systems. In the first months of the pandemic, emergency measures had to be used, such as the cancellation of elective surgeries and routine outpatients appointments, the rapid discharge of stable patients and the transfer of stable patients in other hospitals, the reassignment of staff from one team to another or the use of outside clinicians; in the next months and years we'll have to learn to live with the virus, so it will be extremely important to achieve optimal management of patients with COVID-19, both in hospital care and in outpatients care delivery. A recent study focused the interest on New York City Hospitals, which is the higher municipality hospital system in the US, with the aim to acquire from the lessons learned through COVID-19 and to apply them to improve the care to inpatients and outpatients in the future (8). Actually, New York City emerged since the beginning of the pandemic for its disproportionately affected population, with a continuous increase of cases and deaths, which made health care critical (9). Wei and coworkers have identified a number of elements to comprise in a hospital disaster plan to deal with the enlarged volume of patients or workforce shortages (8). Table 1 shows the different elements identified.

This new management approach to the COVID-19 pandemic appears to be of significant interest in the running of COVID-19 patients. A first way of evaluat-

Table 1. Description of the elements to be included in plans concerning a greatly increased volume of patients or Workforce shortages.

Element	Explanation (when needed)
Maintain line of sight	Minimizing the number of times nurses entered the patient's room by placing windows in walls and the use of video monitoring.
Mind the air	Using additional methods of decreasing potential transmission of COVID-19 such as high-efficiency particulate air filters and UV lights
Emotional support health care workers	Vulnerability, sense of guilt and fear were typical for healthcare workers, so resilience training and recharge rooms were provided
Masks forever (at least for some)	As the use of masks was proven to be one of the main device to reduce not only the spreading of covid-19 but also of other respiratory viruses such influenza, there are plans to continue the mandatory use of masks in some hospitals
Use the technology to connect families near and far	Infected patients were alone, surrounded only by masked figures, away from their loved ones; the hospital guaranteed communications via tablets and other electronic devices
Maintain caches of supplies and diversity supply chains	Some hospitals run out of drugs or medical equipment to treat their patients; in the future, the management of medical supplies excess has to be improved.
Reduce the burden of unnecessary documentation	The surge of patients arriving in emergency departments and ICUs forced multiple electronic health record process improvements, that reduced the burden of order entry and documentation, and allowing healthcare workers to spend more time with their patients.
Address persistent racial and ethnic disparities in health	The increased prevalence of hypertension, diabetes, and obesity among racial and ethnic minorities contributed to their greater morbidity and mortality. primary care must be geographically near, be culturally competent, provide translation services for persons with limited English proficiency, and support persons with low literacy levels.

ing its impact may consist in a simple comparison between the mortality before and after the use of the new elements. Actually, the deaths in New York City from March 2020 to June 2021 amounted 555,9 per week (9), compared to 32,37 per week in the period from June to August 2021 (10). However, reliable data on the role of the handling elements proposed by Wei et al. is likely that can only be provided by statistical studies comparing disease and mortality rates in different US states based on the type of COVID-19 management.

The COVID-19 pandemic has challenged our healthcare system, highlighting challenges and weakness already present, but the collaboration and the new solutions implemented in these difficult times can benefit all patients in the future.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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