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VARIA

Planning a hospital to respond to the COVID-19 outbreak: experience from a Romanian reference unit

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Abstract: *During the COVID outbreak, many hospitals were nominated as a support hospital for the treatment of positive tested patients infected with SARS CoV-2 virus. "Dr. Nicolae Ruşdea" Pneumophtiziology Hospital Baia Mare carried out an exceptional activity compared to the previous year considering the current epidemiological context. Major changes were made in strategies, procedures and protocols. The staff had to adapt to the new epidemiological situation through dedication and devotion. In 2020, there were no COVID outbreaks within the unit, as separate compartments were made, intended to protect the medical personnel, but also to ensure the health of the patients.*

Keywords: *COVID plan, hospital, Romanian reference unit*

INTRODUCTION

"Dr. Nicolae Ruşdea" Pneumophtiziology Hospital Baia Mare is a specialized hospital providing medical services in the specialties of pneumology for adults and children. Starting with April 2020, it provides hospital care for patients tested positive for the SARS-CoV-2 virus, including intensive care. In 2020, the hospital served the entire county of Maramureș for patients tested positive for SARS-CoV-2 virus. In the intensive care department, patients from Maramureș County received health care, mainly from the country, depending on the places available at the request of the Committee for Emergency Situations. Throughout this period, the fight against pulmonary tuberculosis continued through the national control and surveillance program as well as ensuring the continuity of integrated ambulatory care services for patients with non-Covid pneumological diseases and the follow-up of post-Covid patients. Compared to the previous year, considering the current epidemiological context, which led to major changes in the way of working, procedures and protocols. In order to provide the resilience of health systems during the COVID-19 pandemic, we describe, at the hospital level, the key elements to provide the medical staff sand patients safety, including the challenges and issues to anticipate following the experience of our center

CLINICAL EXAMPLE

The aim was to establish synergies between health worker safety and patient safety policies and strategies, developing linkages between occupational health and safety, patient safety, quality improvement, infection prevention and control programmes [1]. It was necessary to review and upgrade the standards, guidelines and codes of practice in order to assure the health worker and patient safety [1]. The executive board consisting of a multidisciplinary team: general manager, epidemiologist and the technical-administrative staff, planned the separation of the hospitals' circuits in COVID and NON-COVID. During the pandemic, the hospital changed his usual structure, consisting of 2 departments of medical specialties (pneumology, intern medicine, cardiology, urology, metabolic diseases,

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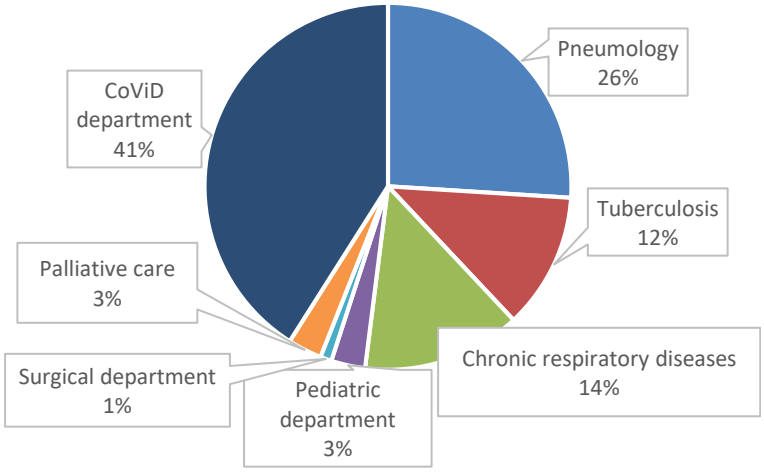
neurology), one section of surgical specialties, one pediatric department, a department ICU (intensive care unit), blood transfusion units, palliative care and an operating room. The rest of the structure was maintained: farmacy, sterilization, medical analysis laboratory, radiology department, tuberculosis dispensary, reception desk, evaluation and medical statistics department (Figure 1).

Figure 1: Plan for new structure of the hospital to augment the health system during the pandemic.



After the State of emergency in the coronavirus pandemic, depending on the local epidemiological evolution, the hospitalizations and the scheduled surgical interventions can be resumed, as well as the activity in the outpatient clinics. Being a 4-storey Hospital, a level was created for the green zone, non-COVID, and the 2nd and 3rd floor were allocated for the COVID section - red zone, served by an elevator: at each level a separate filter for dressing and undressing the protective equipment; the 4 elevators and 6 exits of the hospital had separate destinations: a red zone entrance, one for staff, one for drugs and one for food. A special elevator for patients, one for the staff and the elevators on the opposite side of the building are used for waste and medical staff. A separate circuit was intended for the ICU section, and a separate one for the rest of the staff. In the green area, the staff was separated, depending on the section, so as not to be conglomerated by people. Radiology department: provides a separate circuit for non-COVID patients hospitalized, and a dedicated department for tuberculosis dispensaries. Also a sequential circuit for computer tomography access. The organization of the COVID departments provides a separate circuit for access to the Covid patients section with a dedicated elevator only for COVID-positive patients. The medical personnel circuit with clothing filter area, decontamination area, green area for rest and document preparation (common for COVID and ATI section). The contaminated waste had a special circuit - collection and transport on a circuit intended only for waste (all waste generated in the COVID section are considered hazardous waste). The food circuit, consisting in disposable dishes, are collected as infectious medical waste. Assistance to acute and chronic non-COVID pneumology patients was assured. When entering the hospital, all people will go through an epidemiological triage, depending on the symptoms presented, the suspicious cases will be hospitalized in special isolation areas (buffer-zones), organized at the 1st floor, to be tested by RT-PCR for SARS-CoV-2 infection (according to the recommendations of the National Institute of Public Health). Separate circuits are provided for these patients.

DISCUSSIONS

With all the circuits, red-zone and green-zone, the hardest part was teaching the staff to overcome fear, but the idea that you have some completely separate safe circuits made the staff trustful and work, and accept the new rules imposed. Moreover, having 4 training teams that teaches the use of the protective equipment, the existence of a supervisor in the first 3 months to monitor the dressing and undressing the equipment, in order to avoid mistakes. As a result, there was no outbreak in the hospital for 12 months, with only isolated cases coming from outside of the hospital.

CONCLUSIONS

The coronavirus disease (COVID-19) outbreak is a global public health problem. Medical personal is an important at-risk population that can get COVID-19 due to close contact with patients2. The healthcare reform, with subsequent amendments and additional changes, caused a new reorganization and restructuring of health units, depending on the needs, in order to ensure the isolation conditions and

the functional circuits that aim at the prevention and control of the SARS-COV-2 infection3,4. The reorganization and restructuring of the health units subordinated to the local public administration authorities will be done with their consultation. The reason for these changes is mostly because of the epidemiological evolution of the SARS-COV-2 virus pandemic. In addition, there is an increased addressability of patients with pneumological problems including patients with pulmonary diseases after SARS-COV-2 infection that need recovery. Also, the need to carry out the activities of the tuberculosis prevention and control programs.

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