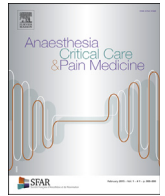




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Letter to the Editor

The organisation of a French emergency department in a coronavirus hotspot



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Almost every health care system is currently facing an unprecedented crisis. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) outbreak has gradually spread throughout the world, posing an organisational challenge to all countries [1]. Emergency departments (ED) are on the front line for primary care and triage of infected patients and their organisation must be improved in order to meet these new constraints [2]. In France, the outbreak was particularly intense in the eastern regions. At the University Hospitals of Strasbourg (HUS), from March 3rd to May 3rd, a total of 9464 patients visited the ED. We performed 2914 throat swabs for reverse transcriptase–polymerase chain reaction (RT-PCR) for SARS-CoV-2 infection on which 1114 returned positive. During this period of time, 200 patients were directly transferred in intensive care units (ICU) and 1002 patients were admitted to medical wards due to COVID-19.

Gradually, during the first weeks of March, the growing flow of patients was no longer compatible with a classic ED's organisation. Moreover, the need to protect the ED's staff and patients considerably reduced the total capacity of our department. Before the outbreak, staff was used to receive and monitor patients in corridors or collective waiting areas. Because of the risk of contaminating caregivers and other patients, this organisation was no longer possible. Each patient needed to be confined to a closed examination room and the ED's capacity had then subsequently decreased by half. A new organisation was prepared with the hospital's crisis cell and the entire ED's staff, and was gradually implemented.

This type of organisation was inspired by disaster medicine and exceptional health crisis (EHS), applied in conventional medical settings (Fig. 1). A triage area was installed in the ambulance airlock. The emergency examination area became an Advanced Medical Post (AMP) and the ED short-stay unit (SSU) became an evacuation area. All patients arriving at the ED were confined in an ambulance until first medical evaluation. Registration was done by ambulance attendants upon arrival. A senior emergency physician (EP) and an ED nurse assessed patient gravity while collecting nasopharyngeal swabs for SARS-CoV-2 testing, and blood testing was also performed. After this triage phase and before entering the AMP, the patient had an unenhanced low-dose chest CT scan with classification of the results as suggestive or non-suggestive for COVID-19. Afterwards, patients were fully examined in a confined box in the AMP. Once the severity and differential or associated diagnoses had been assessed, the AMP physician decided on the patient

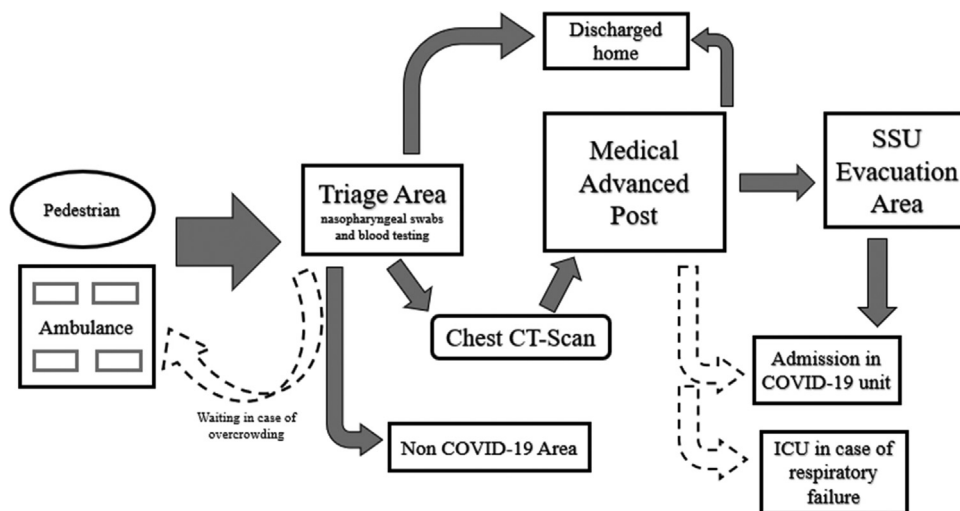


Fig. 1. Patient pathway in the dedicated site emergency department, University Hospital of Strasbourg, France. SSU: short stay unit, ICU: intensive care unit

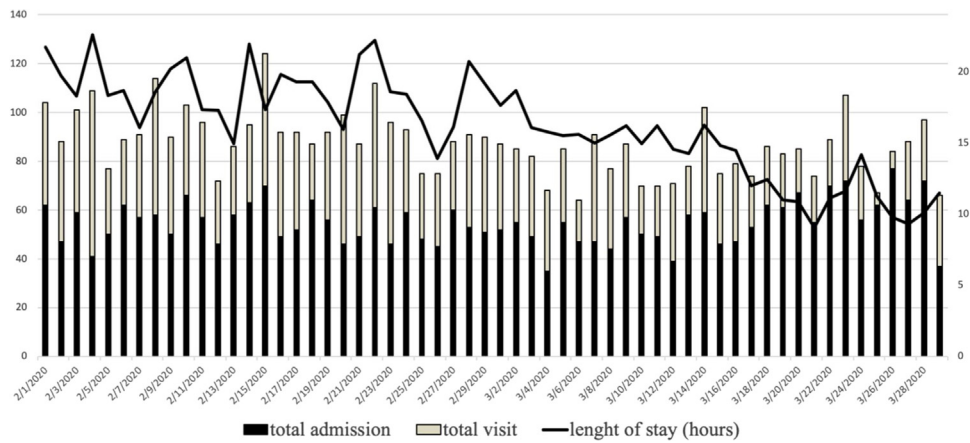


Fig. 2. Total visits in dedicated site emergency department, admitted patients and length of stay, University Hospital of Strasbourg, France.

orientation. The patient may be referred back home with monitoring instructions or may require hospitalisation. In case of hospitalisation, the patient was moved to the SSU in a single room. The SSU acted as an evacuation area allowing a significant turnover at the AMP. The EP in the SSU worked as an evacuation doctor, coordinating hospitalisations with the help of the bed management unit, allowing three patient rotations per 24 hours for each room. This segmented organisation of care, based on the go-forward principle, required a high degree of coordination between all operators and well-defined roles at each stage of care.

The organisation was modelled on international standard of care of disaster medicine [3]. Flows must be quick and the triage tools adapted to the situation. In this COVID-19 outbreak, the chest CT scan, due to its high diagnostic performance in the case of typical images, appeared to be an efficient triage element [4]. In fact, it can be carried out as soon as the patient is admitted, allowing rapid referral to COVID-19 hospitalisation units in case of typical imaging. The time saved is considerable because the patient is brought to medical imaging by ambulance drivers, reducing waiting times. In case of respiratory failure, the diagnosis was quickly made for early referral to the ICU. A detailed evaluation of the system remains to be done but we have noted a reduction in the time spent in the ED with this organisation while daily frequentation (around 100 visits) per day was similar to before the outbreak (Fig. 2). This shows the effectiveness of the strategic choices that have been made, i.e. to respond both to the increase in the number of visits and the reduction in ED's capacity.

Disclosure of interest

The authors declare that they have no competing interest.

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