



## Fear, Preparedness and Covid-19

### Peur, Organisation et Covid-19

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In December 2019, an epidemic of a novel coronavirus has taken China by storm. Warning messages were sent to the World Health Organization on the fast-moving transmission of the virus (1). Worldwide, governments adopted different strategies as preparation for the possibility of a pandemic (2). Once Europe, mainly Italy, experienced a significant rise in number of cases, the Tunisian government triggered a crisis meeting on February 4<sup>th</sup>, urging professionals to come with effective plans to counterattack each phase of an eventual epidemic.

#### Crisis unit

On February 5<sup>th</sup>, one month prior to the detection of the index case, the Farhat Hached University Hospital of Sousse implemented a crisis unit formed by a team of administrative and several multidisciplinary medical professionals; infectiologists, intensivists, emergency physicians, pulmonologists, pediatricians, hygienists, pharmacists, occupational health physicians, and forensic physicians. Several objectives were designed by the crisis unit. First, to organize predetermined secure channels and pathways for management of suspected/confirmed Covid-19 patients, starting from initial clinical examination in the pre-hospital setting and reaching medical departments required to manage these patients, in the hospital setting. These departments were requested to adjust their bed capacities in anticipation of a possible epidemic surge. A second role was to assure health professionals safety. Pharmacists worked to arrange a sufficient supply of Personal Protective Equipments (PPE) for departments required to receive Covid-19 patients. Hygienists arranged training sessions in Covid-19 transmission mechanisms and ways of protection, mainly the adequate use of PPE and biomedical waste management. Another aspect of caregivers' safety was to provide structures for people who choose to confine after work shifts to protect their families.

#### Intensive Care Unit upgrade

Preparing for an eventual Covid-19 epidemic surge, meant increasing the ICU capacity in terms of isolated beds. The Farhat Hached Medical Intensive Care unit had 9 beds divided in two units. However, only the first unit disposed of 4 individual rooms. The opening of a third unit of 5 individual rooms was on hold since several years for lack of material and human resources. A plan was set in place to supply the third unit with medical equipment and to reorganize the second unit of non-isolated beds in individual rooms, thus, increasing the capacity of ICU from 4 isolated beds to 13 isolated beds.

In order to manage three units of 13 beds, an increase of paramedical staff was necessary. The administration was requested to engage in a nurses' reallocation strategy. Paramedical staff from departments free of Covid-19 patients was assigned, temporarily, to the ICU.

#### Challenges

Once the first case detected, “fear” was the main element that challenged various aspects of dealing with the Covid-19 epidemic. A comprehensible fear of contamination hindered reasoning and decision-making skills. Fear influenced the process of examining patients and making diagnosis. Despite training sessions and adequate PPE, some professionals were still wary of closely examining and assisting patients. Incomplete initial clinical examination, misconceptions on procedures at risk of aerosolisation, namely, the necessity of a videolaryngoscope for airway management, created discrepancies in clinical severity evaluation and delayed appropriate stabilization and assistance. On some occasions, patients were mistaken to present moderate acute respiratory failure arrived to the ICU on a wheel chair with no peripheral venous line and were immediately intubated on admission. Two of medically transported patients, on scoop and run basis, died before reaching the ICU. Nasopharyngeal swabs were, at times, executed superficially. Chest X-ray couldn’t, initially, be performed. Healthcare professionals were excessively consuming PPE when not needed. Luckily, the management of the few first cases helped ease certain healthcare professionals’ reluctance.

However, hesitancy persisted when asked to help in the ICU. A few volunteered for short periods of time. The plan to bring new recruits was difficult to achieve. Five ICU nurses filed for sick leaves. These conditions led to discomfort, stress and even burnout among the remaining staff.

As the epidemic progressed, some challenges aroused concerning suspected cases hospitalization referral. On a logistic level, the new organization of the ICU took time, effort and funding. On the other hand, other medical departments were lacking isolation beds compared to hospital needs. This created a disconnect, when admitting suspected Covid-19 patients. On some occasions, suspected cases were, either excessively hospitalized in ICU or patients needing ICU admission were managed in medical departments. These observations became more prevalent as soon as horizontal contamination was detected, leading to generalizing the definition of suspected cases. Every dyspnea was considered as Covid-19 pneumonia, even though there was evident alternative diagnosis. In a two-month period, 37 patients were admitted in ICU, only 10 were RT-PCR confirmed Covid-19 pneumonia. In addition, and still because of a persistent “fear”, Farhat Hached University Hospital was requested to admit suspected patients from Sahloul University Hospital Emergency Department and other regions where local hospitals couldn’t yet receive Covid-19 patients, such as Mahdia, Monastir, Gafsa, Sidi Bouzid, Medenine and Zarzis. At certain times, the pressure felt by all parties involved created misunderstandings and conflicts that required communication in order to be solved.

A second array of challenges appeared once patients were admitted to ICU. Puzzling discrepancies were observed between a well-tolerated progressive dyspnea and a profound hypoxemia detected with pulse oxymetry on first medical contact as reported by some authors (3). A set of patients consulted in a state of severe acute respiratory failure requiring invasive mechanical ventilation upon arrival to ICU. These patients had tolerated their dyspnea for several days with absence of struggle signs leading to late diagnosis and poor prognosis. All invasively ventilated patients passed away within a two-week evolution leading to prioritize noninvasive ventilatory strategies when possible, namely, High Flow Nasal Cannula and Non-Invasive Ventilation. Four patients were managed non-invasively, only one patient failed and required mechanical ventilation.

Dealing with unprecedented health crisis such as the Covid-19 pandemic, required quick responses of health systems, and adjustment of diagnostic methods. This pandemic not only affected public health but also revealed deep fear. However, in the case of healthcare professionals, fear shouldn’t affect critical thinking and basic reflexes when managing Covid-19 patients.

## References

- (1). Huang C, Wang Y, Li X et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395:497-506.
- (2). Cohen J, Kupferschmidt K. Strategies shift as coronavirus pandemic looms. Science. 2020;367(6481):962-963.
- (3). COVID-19: Home Pulse Oximetry Could Be Game Changer, Says ER Doc [Internet]. Medscape. 2020 [cited 6 May 2020]. Available from: <https://www.medscape.com/viewarticle/929309>