Intensive care units, the Achilles heel of France in the COVID-19 battle

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Commentary

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From January 3, 2020 to January 13, 2021, France reported 2,760,259 cases of COVID-19 with 68,419 deaths [1] and ranked the sixth country. After Ebola and Zika crises, France promoted universal health coverage to achieve global health security [2]. COVID-19 pandemic demonstrates that French initiative was mothballed after the 2017 presidential election. The Defence Council takes decisions during closed meetings without involvement of civil society, local stakeholders or affected populations, and without transparency. There were insufficient mechanisms for surveillance, alert, diagnosis and plans for crises responses. As a result, France failed foreseeing the insufficient hospital capacity to handle massive surge of critical cases, and securing universal access to healthcare. In 2006, there were 10.7 beds per 100,000 inhabitants. In January 2020, the number of ICU beds per capita was eight per 100,000 (about 5400). It was lower than the average capacity of 185 countries [3]. France has lower availability and accessibility of ICU beds, and more regional disparities than Germany, Luxembourg and Austria [4]. Differences in ICU resources were associated with differences in COVID-19 related case fatality ratio [4]. After the first wave, there were 502 and 119 deaths per million inhabitants in France and Germany, respectively. Up to first week of March, there were around 45 ICU patients nationwide. As of March 16, while there were more ICU patients than ICU beds [5] President Emmanuel MACRON proclaimed the general lockdown. The Ministry of Health halted non-COVID-19 healthcare activities to mount temporary ICU facilities. The surge of ICU patients peaked at about 7000 patients in April 10. Operating rooms, post-operative care rooms, coronary care units, stroke units, intermediate care units were converted into ICUs. Most of these temporary units could not meet regulatory requirements for setting/equipment and staff resources [6]. They were mostly run by doctors and nurses without critical care experience. By end of May, while the number of hospitalized cases returned to levels equivalent to those observed in February [5] temporary ICUs were dismantled. Albeit the high likelihood of a second wave after the summer, France strategy continued to rely on temporary units not on increasing permanent ICUs capacity [7]. Of 296 surveyed ICU directors, 114 (39%) declared 1641 and 1663 permanent beds as of January 1st and November 1st, respectively, and 670 temporary beds. As of November 1st, ICU overflow triggered long-distance (including to neighbouring countries) transfers of ICU patients, and a second general lockdown. Approximately 30% of non-COVID-19 related care were suspended to mount temporary ICU beds. This reduced access to care for non-COVID patients may be

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associated with worse outcomes [8]. A recent study suggested increased in-hospital mortality associated to ICU overflow and temporary ICU beds [9]. There were significantly more COVID-19 related deaths between October 1st and January 12 than between March 1st and September 30 [5]. The major drawback to increasing permanent ICU beds capacity was the shortage in staff resources. French regulation set the nurses to ICU patients ratio at two for five [6]. Thirteen percent of ICU directors declared that they cannot meet this requirement on a 24/7 basis and the frequent use of overtime. Likewise, undersized medical teams, i.e. less than three full time attending physicians per 4 ICU beds, ran most ICUs [10]. These degraded working conditions are a major determinant of nurse burnout and dissatisfaction [11], and may explain the unacceptably high proportion of caregivers (2.8% of physicians and 3.5% of nurses) having left intensive care following the first pandemic wave.

In anticipation of a third pandemic waves or new emergent threats, France should urgently restore an average of 12 permanent ICU beds per 100,000 inhabitants ensuring homogeneous distributions across territories. To this end, the 670 temporary beds set-up closed to or within ICU walls should be immediately converted to permanent beds. France should align ICU resources to those of other countries [3,4] with recognizing the specific competencies of ICU nurses [12] and salary increase, increasing staff resources with ratios of nurses to patients of at least 1:2 per shift, and of physician to patients of 3:4 per ICU. The annual output of trained ICU physicians should immediately double from 74 per year to at least 150 in 2021.

Author Contributions

All authors have equally contributed to the design, conduct and interpretation of the survey, and to the writing of this manuscript. CS has taken responsibility of logistic support. DA, LF and NT have taken responsibility of collecting and analysing survey data, and of writing the first draft of the mansucript. DA as the president of the French Union of Intensive Care Physicians is responsible for the dissemination of this information and for submitting the manuscript to the Journal.

Declaration of Interests

Authors have no conflict of interest to disclose.

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