

Brief Report

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Overcrowding in the Dispatching Centre During the COVID-19 Crisis: Are Medical Students a Resource?

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Abstract

Introduction: In February, the emergence of CoronaVirus Disease 2019 (COVID - 19) in France made it necessary to rapidly adapt emergency and SAMU services in order to take care of many infected patients. To respond to the increase in the number of calls in the dispatch centers, reinforcements were necessary on the fronts of the Medical Regulation Assistants (ARM). The aim of this study was to assess the relevance of medical students' responses to first calls exclusively concerning COVID-19.

Methods: This prospective, observational cohort study was carried out at the University Hospital Centre (CHU) in Angers. Twenty medical students mostly in the 5th year were voluntarily enrolled in the first line COVID-19 call taker team. Calls on the 1st, 3rd, and 5th starting day for each medical student, and randomly selected calls from the experienced first-line call taker were listened to by a medical expert to assess the adequate level of prioritization and orientation (emergency physician or general practitioner). The percentage of agreement between the expert, students, and experienced first-line call handlers were assessed. All participants gave their free consent to participate. The study was approved by the Ethics Committee of Angers (N° 2020-48).

Results: From March 18 to April 23, 2020, 302 calls from medical students (n = 20 students) and 40 calls from experienced first-line call handlers were analyzed. The average prioritization agreement rate between the expert and students was 76.16% (95% Confidence Interval: 71.04 to 80.62%) (n = 230/302) compared to 87.50% (95% CI: 73.9 to 94.5%) (n = 45/50) for the experienced first-line call handlers (P = 0.15). Medical students took more time per call with an absolute difference of 2 minutes 16 seconds (P < 0.001).

Conclusion: The lessons to be observed from this COVID-19 crisis are that in the early days of increasing calls heralding a strain on the healthcare system, support by medical students must be considered.

Dear Editor,

The 2 successive waves of the COVID-19 pandemic forced the health system to reinvent itself to cope with the influx of patients. The medical dispatch centers were among the first to perceive this increase in activity.¹ Dispatch centers and the Emergency Medical Service (EMS) were the frontlines.^{2,3} An appropriate telephone-triaging system was more than ever essential to ensure proper response.

The French dispatching centers are named SAMU – Centre 15. They are made up of emergency doctors, nurses, ambulance drivers, and first-line call handlers (also called emergency medical dispatchers). A first-line call handler takes calls with the aim of gathering both the identity of the person requiring assistance and the key data to provide a brief summary of the nature of the emergency (chief complaint, intensity, location). Then, they divide the calls between high-acuity calls potentially requiring a Mobile Intense Care Unit by ambulance or helicopter (calls received by emergency physician), and low-acuity calls (calls received by general practitioner). The primary goal of the dispatch call center and first-line call handler is to remain reachable and to answer all calls, ideally within 15 seconds. In this purpose, the emergency medical dispatchers achieved a training from 3 to 12 months.

The Angers dispatching center covers a population of 850 000 inhabitants, receives 950 calls per day and 84 ambulance dispatch missions per day are carried out. During the COVID-19 crisis, this number was multiplied by 2.5 in a matter of days and remained at a plateau of around 2400 calls per day for 22 days. In order to face this major increase, and to protect the first-line call taker teams, a procedure was put in place separating calls from citizens with medical problems

from those who needed assistance, or information about COVID-19. This procedure served the purpose of re-directing a huge quantity of calls which were just to request information. To answer calls related to COVID-19, 3 aid fronts composed of medical students has been set up. Many French and European centers have done the same, but no assessment has yet been published.

The aim of this study was to assess the relevance of medical students' responses to first calls exclusively concerning COVID-19. This prospective, observational cohort study was carried out at the University Hospital Centre (CHU) in Angers. Twenty medical students mostly in the 5th year were voluntary to be enrolled in the first line COVID-19 call taker team. Prior to participation, they received a short initial theoretical training course (3 hours) in whole groups and online training. They worked in subgroups of 3 with 3-hour shifts, during which they were supervised by an experienced first-line call handler. As usual, all calls were recorded. Calls on the 1st, 3rd, and 5th starting day for each medical student, and randomly selected calls from the experienced first-line call taker were listened to by a medical expert (emergency physician or general practitioner) in order to assess the adequate level of prioritization and orientation. The percentage of agreement between the expert, students, and experienced first-line call handlers were assessed. The duration of the call, as well as the search for administrative and clinical data, was studied. All participants gave their free consent to participate. The study was approved by the Ethics Committee of Angers (N° 2020-48).

From March 18 to April 23, 2020, 302 calls from medical students ($n = 20$ students) and 40 calls from experienced first-line call handlers were analyzed. The average prioritization agreement rate between the expert and students was 76.16% (95% Confidence Interval: 71.04 to 80.62%) ($n = 230/302$) compared to 87.50% (95% CI: 73.9 to 94.5%) ($n = 45/50$) for the experienced first-line call handlers ($P = 0.15$). Medical students took more time per call with an absolute difference of 2 minutes 16 seconds ($P < 0.001$). Administrative data was missing in 33% of calls in the student group ($n = 100/302$) and 10% in the experienced first-line call handlers' group ($n = 4/40$) ($P = 0.05$). The best performances were obtained on the 5th day, showing an improvement. Clinical data was statistically more often in demand in the student group.

Medical students have shown adaptability, marked by massive and immediate reactivity in the development of new skills to respond to this activity. Hence, 3 fronts were created to enabled a good level of call response to be maintained. The calls were longer but more precise (more medical information collected). In view of these differences, it would be necessary to train students by clearly explaining the objectives of the call: to carry out a rapid interview to assess the seriousness of the patient, on which the intervention of emergency medical assistance will depend. It will also be necessary to emphasize the impact that a lack of administrative data can have on the dispatch of emergency aid, in order to improve the way in which students complete the form.

Students also benefited from participating. Allowing students to play an active role in such a crisis situation contributes positively to their professional identity.^{4,5} Important factors here are the feeling that they can make a relevant contribution to patient care and be part of a team of healthcare professionals.

The lessons to be observed from this COVID-19 crisis are that in the early days of increasing calls heralding a strain on the healthcare system, the fronts of support by medical students must be considered. Organizing and anticipating this situation will enable dispatch centers to protect teams while maintaining a quality response.

Availability of data and material. Available upon reasonable request.

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Ethics approval and consent to participate. All participants gave their free consent to participate. The study was approved by the Ethics Committee of Angers (N° 2020-48).

Abbreviations. CHU, University Hospital Centre; CI, Confidence Interval; COVID-19, Coronavirus Infectious Disease 2019; EMS, Emergency Medical Service.

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