SCIENTIFIC LETTERS

Organization and epidemiologic analysis of 061 calls to the medical emergency coordination center of the Balearic Islands during the coronavirus crisis

Organización de la Central de Coordinación de Urgencias Médicas del 061 de Baleares en la crisis del coronavirus y análisis epidemiológico de las llamadas recibidas

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On the 31th of December the first case of SARS-Cov-2 was detected in Wuhan, China. The first positive case in the Balearic Islands (second case in Spain) was reported on the 9th of February 2020. This paper aims to describe how SAMU 061of the Balearic Islands managed to provide an effective response to the flood of patients, as well as to act as an epidemiological watchdog to anticipate the epidemic wave and allow sizing the health needs at other levels of care.

This paper presents the coordination plan in the 061 Medical Emergency Coordination Center of the Balearic Islands (CCUM) during the confinement period. In addition, a retrospective analysis of the calls received coded as "Coronavirus Alert" was carried out, relating them to the total number of calls received in the SAMU 061 of the Balearic Islands during that period.

In relation to the contingency plan, on January 27th 2020, work began on the possible scenarios for a probable epidemic outbreak of coronavirus in the Balearic Islands. The possible risks were analyzed: technical risks with possible collapse of lines, human risks with adaptation of shifts and avoidance of extended working hours, as well as the type of response that could lead to hospital saturation, with the coordination between levels and under the direction of the General Directorate of Public Health (DGSP) of the Balearic Ministry of Health (DGSP). On the 9th of February, the code "Coronavirus Alert" was created in SAMU 061 Baleares, which allowed monitoring the demand and the type of response to the consultation related to the possible outbreak, as well as the immediate notification of suspected cases and contacts to the DGSP.

A maximum number of incoming calls was stablished for each call reception, which made it necessary to increase the number of lines licensed from 19 to 27 lines and to monitor the maximum number of calls per hour. In terms of human resources, the number of regulating physicians increased from 3 to 7, from 1 nurse coordinator to 11, from 4 answering teleoperators to 5, and from 4 dispatch telephone operators to 14.

Cross-cutting operating procedures were updated to ensure continuity of care. Regarding the decision tree, 2 types of response were added to the "Coronavirus Alert" code: health and informative consultation, where a first basic informative triage was performed by a demand teleoperator. If the patient met the epide-

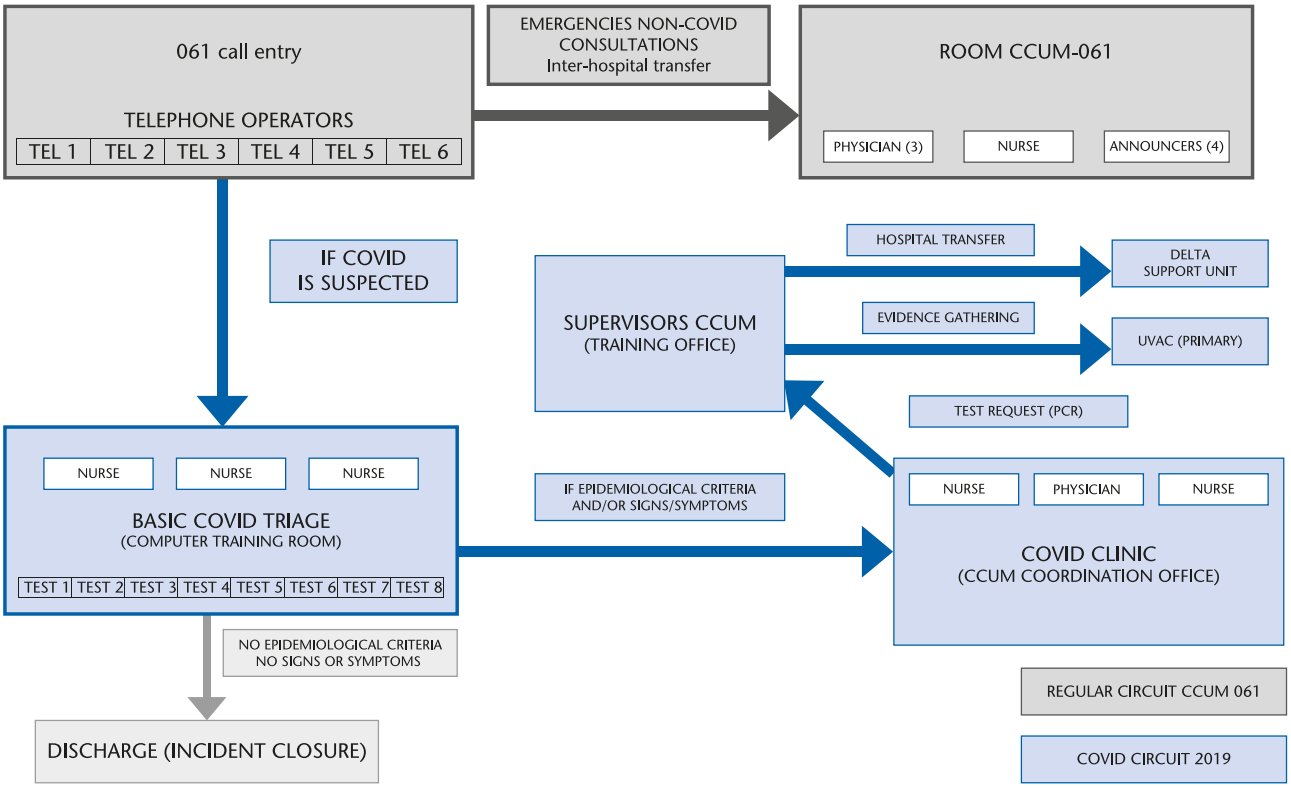

Figure 1. Call algorithm in the 061 Balearic Islands Emergency Medical Coordination Center (CCUM). PCR: polymerase chain reaction.

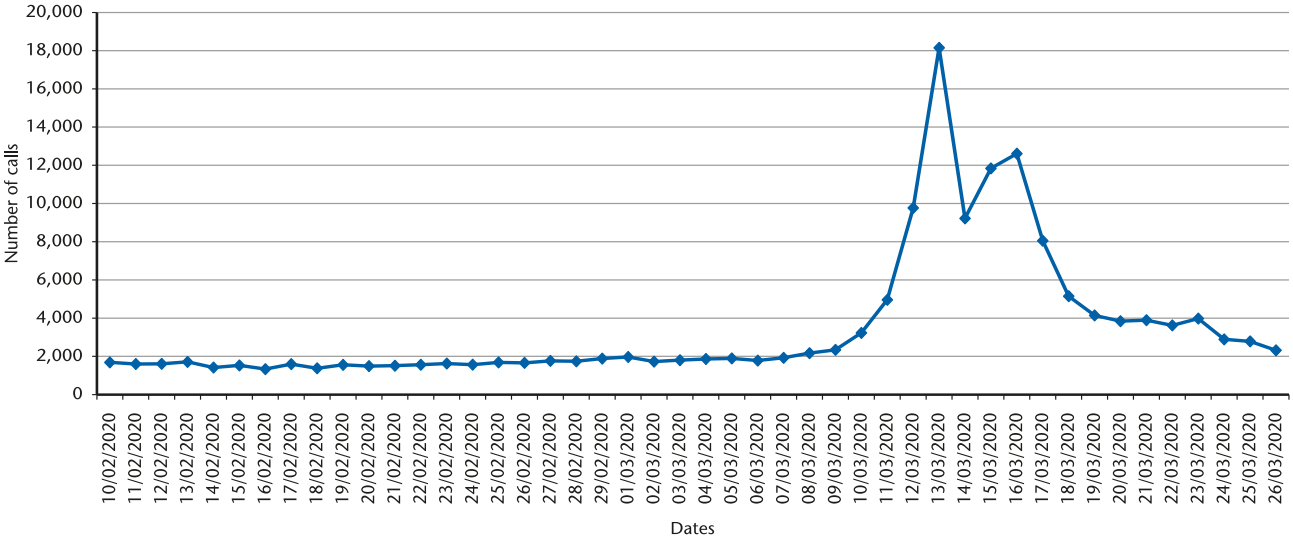

Figure 2. Temporal distribution of calls to the 061 Baleares Medical Emergency Coordination Center.

miological criteria without symptoms, he/she was transferred to an intermediate triage room composed of teleoperators and nurses, and if he/she manifested symptoms, to an advanced triage room composed of teleoperators, physician and nurses, in order to not alter that the ordinary operations in emergency and urgent care based on the guiding symptoms.

The types of response were COVID information and were closed if no epidemiological or clinical criteria was met with the general recommendation. In the event of a probable case (epidemiological criteria met with no symptoms) both home isolation for 14 days and calling back in case of symptoms were advised. The patient was transferred to the DGSP, while a resource for sample collection was activated. In the case of symptomatic patients, close contact, comorbidities, or worsening symptoms, the patient was evaluated in the advanced triage room with the appropriate type of response in relation to the clinical or social situation (Figure 1) In relation to the activity of the device, during the period from the 10th of February to March 26th, the total number of calls received at the SAMU 061 CCUM (164,449) of which 22% were related to SARS-CoV-2 (16,585 affected). From the latter, 90% were related to "COVID Information" while 10% were classified as medical consultation under the annotation "COVID Follow-up". This had different types of response depending on the severity of the symptoms. Resource mobilization was required in 5% of cases and 4.3% (734 patients) were transferred to hospital. On March 26th, 755 cases of COVID-19 had been officially described in the Balearic Islands, of which 89% had contacted 061. The peak of calls occurred from March 10th to 16th with a unimodal distribution (Figure 2). The date of symptom onset followed a bimodal distribution with a progressive increase from February 21th and a maximum on March 3th. The main reasons for consultation were fever, cough and dyspnea, although in most cases PCR (polymerase chain reaction) was performed as it met epidemiological criteria (Figure 3). The dates on which the most positive PCRs were obtained were March 11th-16th.

The health system is based on 2 pillars: epidemiological surveillance (alerts) and health care (treats). The emergency medical systems (EMS) must carry out both tasks, always in coordination with the other levels of health care under the direction of public health. The emergency services, especially through the medical coordination centers, are a fundamental tool in the management of epidemic outbreaks. A system of triage and immediate detection of increased demand is necessary to anticipate epidemic waves and allow the rest of the health care levels to dimension their response.

Planning, updating of procedures, risk analysis and the preparation of contingency plans that allow the immediate reorganization of the emergency service is essential to deal with multiple casualty situations such as the current epidemiological situation. Finally, it is necessary to achieve maximum interlevel coordination be-

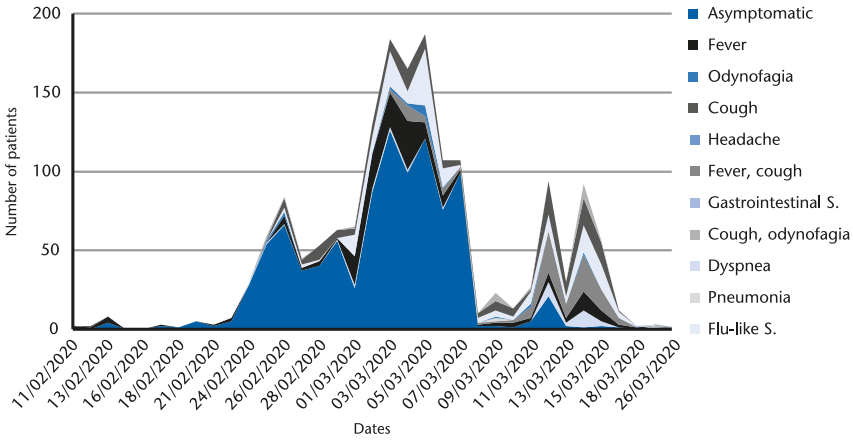

Figure 3. List of dates and number of patients who reported each of the symptoms. S: symptoms.