




COVID-19 pandemic and Internal Medicine Units in Italy: a precious effort on the front line

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Dear Editor,

On 30th January 2020, the World Health Organization declared the SARS-CoV-2 infection a pandemic, generating a heavy burden of morbidity, mortality, and stress for healthcare systems [1]. After the initial COVID-19 outbreak in China, Italy was the most affected European country in the earlier phase of the pandemic, and faced an unprecedented healthcare emergency [2]. Internal Medicine Units (IMUs) are widespread in Italy being present in every hospital. As a matter of fact, IMUs constitute the backbone of the infrastructure of wards of the Italian National Healthcare system, and have been widely involved in the organisation of the response to the COVID-19 outbreak [3, 4]. The Federation of Hospital Internists (FADOI) is a scientific society accounting for nearly 3000 internal medicine physicians and representing more than 500 internal medicine wards in Italy. In order to assess the role and contribution of IMUs in tackling the COVID-19 pandemic, the FADOI Research Centre promoted a survey through a short questionnaire delivered to the chiefs of different IMUs in the Italian Regions, which were most involved in the COVID-19 outbreak between 15th April and 4th May 2020. Fifty-two participating centres completed the survey. Of note, 38 (73%) of IMUs were involved in providing direct care to COVID-19 patients (45% in Northern, 37% in Central, and 18% in Southern Italy).

In hospitals where COVID-19 patients were cared for, 58% of total hospital beds were in Internal Medicine Units. A significant reorganization was set in place in most hospitals and many resources were dedicated to COVID-19 patients. Sixty percent and one-third of IMUs dedicated 50% and 80% of beds to COVID-19 care, respectively.

In the 38 Internal Medicine units involved in the care of COVID-19 patients, 6650 patients were admitted, accounting for 6% of the total SARS-CoV-2 infections reported by the Health Ministry database on 04 May 2020. During the 3 weeks of the survey, the workload evaluated simply by the number of patients cared for, was the following: 10% of IMUs less than 100 patients, 60% 100–200 patients, 30% more than 200 patients. The surge of COVID-19 patients and the limited number of Intensive Care Unit (ICU) beds, posed a significant stress on the healthcare system and IMUs played a pivotal role in caring for patients with moderate to severe disease. Indeed, the results of the survey revealed that more than half of COVID-19 patients (53%) were treated with non-invasive positive pressure ventilation while admitted to IMUs. Of the 6650 patients admitted to IMUs over the survey period 604 (9.1%) were transferred to ICUs, 1064 (16%) died in the hospital, 4589 (69%) were discharged, and 6% were still in hospital at the end of the survey. It is important to underline that 16% of physicians and 9.3% of nurses working in IMUs tested positive for SARS-CoV2 (or developed COVID-19), witness to the high price of battling in the frontline of a risky and stressful environment.

Questions and results from this survey are shown in Table 1.

Now in the second week of May, the spread of the disease appeared to be slowing down, and the basic reproductive number (R_0) for SARS-CoV-2 is below 0.8 in many Italian Regions. Fewer patients are now being admitted to COVID dedicated hospitals, and Intensive Care Units are able to respond adequately to the needs of critical patients. This trend is the result of the combined effort of hospital and

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Table 1 Questions and results from the survey

Questions	Results
1. Is there a COVID-19 Unit in your hospital?	Yes: 73% ($N=38$) No: 27% ($N=14$)
2. Total number of beds in your hospital	< 300 beds: 28 hospitals Between 300 and 900 beds: 21 hospitals > 900 beds: three hospitals
3. Maximum number of beds for COVID-19 in your hospital	Mean \pm SD: 107.3 ± 90.9 Total: 4076
4. Maximum number of beds for COVID-19 in Internal Medicine Units	Mean \pm SD: 61.9 ± 64.1 Total: 2351
5. Number of medical personnel in Internal Medicine Units	Mean \pm SD: 12 ± 7.6
6. Number of COVID-19 patients hospitalised in your hospital	Mean \pm SD: 229 ± 416.4 Total: 11,679
7. Number of COVID-19 patients hospitalised in Internal Medicine Units	Mean \pm SD: 127.8 ± 212.1 Total: 6650
8. Number of COVID-19 patients discharged (among those in Internal Medicine Units)	Mean \pm SD: 88.3 ± 182.4 Total: 4589
9. Number of COVID-19 patients transferred to the Intensive Care Units (among those in Internal Medicine Units)	Mean \pm SD: 11.6 ± 23.2 Total: 604
10. Percentage of COVID-19 patients treated with non-invasive ventilation (among those in Internal Medicine Units)	53%
11. Number of COVID-19 patients who died (among those in Internal Medicine Units)	Mean \pm SD: 20.8 ± 39.3 Total: 1064
12. Number of Internists dedicated to COVID-19 unit	Mean \pm SD: 8.1 ± 8.2
13. Number of Internists COVID-19 positive	Mean \pm SD: 1.3 ± 2.1
14. Number of nurses dedicated to COVID-19 unit	Mean \pm SD: 37.6 ± 43.7
15. Number of nurses COVID-19 positive	Mean \pm SD: 3.5 ± 4.9

SD standard deviation

community healthcare services, and IMUs have definitely led in managing the surge of COVID-19. Patients infected by SARS-CoV-2 often develop respiratory, cardiovascular, thrombotic, and multiple organ complications needing competent physicians able to tackle complicated diseases, and complex therapeutic regimens, as internal medicine specialists are [1].

After facing the COVID-19 “earthquake” the role of Internists and IMUs may be pivotal in dealing with critical issues (the so called phase 2). COVID Hospitals need to be reorganised by reducing COVID dedicated beds and resuming care pathways for non-COVID patients in and out of the hospital setting. Non SARS-CoV-2 patients with acute or chronic diseases have been inevitably neglected and their assistance delayed, with deleterious effects on morbidity and mortality [5] due to cardiovascular, respiratory, or renal complications. Dealing with a “grey zone” of patients with acute respiratory syndromes, for which the results of SARS-CoV2 swabs are pending or negative while the clinical picture still remains uncertain, is not an easy to address point. IMUs can indeed play a significant role in the evolving models of hospital rearrangement,

thanks to flexible and competent personnel able to deal with complex situations and new organisational models. Therefore, Internal Medicine Units in Italy proved they could play strategic roles in patient care and hospital organisation during the different phases of the COVID-19 “tsunami”. The war against SARS-CoV-2 will be long-fought, but physicians and nurses working in IMUs will silently continue the serious job of sustaining and reinforcing the infrastructure of our national healthcare system.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Statements on human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent None.

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