



# Management of COVID micro-areas for asymptomatic or paucisymptomatic patients hospitalized in Azienda Ospedaliera Universitaria Pisana (AOUP, Italy)

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To face the challenges posed by the coronavirus disease 2019 (COVID-19) pandemic, mainly treatment of affected patients as well as implementing safety measures for the protection of patients and personnel, hospitals had to adapt their operational workflows in the Azienda Ospedaliera Universitaria Pisana (AOUP), a 1,165 bed specialistic Italian teaching hospital the first pandemic wave (first half of 2020) (1) required a scaling down of the ordinary medical and surgical activities, to face the needs for treatment of COVID patients, as well as the activation of ad hoc units of low and intermediate care dedicated to these patients in the second and third pandemic waves (second half of 2020 and first half of 2021) to avoid hospital overcrowding (2). In the first phase of the emergency, dedicated COVID areas were established, including intensive care units (ICUs), operating rooms and medical wards.

Following the transition of the COVID epidemiology from pandemic to endemic (3), an increasing number of patients admitted to the hospital for reasons other than COVID, but positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) and either asymptomatic or paucisymptomatic was observed; considering the clinical requirements related to their diagnosis, admission to a dedicated COVID ward was no longer appropriate, furthermore transfer of these patients to a COVID ward

would have resulted in an overcrowding of the latter.

In July 2022, the mean percentage of COVID positive patient in AOUP was 15%, but only 11% of them are symptomatic for the presence of pneumonia or respiratory failure and were admitted in hospital for these pathologies. All symptomatic patients were located in dedicated ICUs.

The aim of this letter is to describe the management of a new model of hospitalized positive patients without severe respiratory symptoms.

There are some criteria chosen by others hospitals for calculate the required percentage of COVID beds to their facilities, such as the number of nursing staff and the ward areas. Overall, each hospital may calculate a synthetic indicator (installed capacity index) assessing hospital capacity (4).

The Tuscany Directive Degree n. 581/2022 (5) describes the guidelines for the management of positive asymptomatic or paucisymptomatic COVID-19 cases. It directs every healthcare facility to define distinct care pathways of those patients, within the specialist ward, providing for the isolation of patients in single rooms, and compliance with care precautions even in the absence of airborne systems ensuring negative pressure (normal ventilation). Rooms occupied by SARS-CoV2 positive patients were required to be appropriately marked as such. Health care workers

**Table 1** COVID and total beds numbers located in each ward of different medical and specialized clinic setting, ICUs, and surgical settings of AOUP

Ward	COVID beds	Total beds
<b>Medical setting</b>		
General medicine unit 1	10	45
General medicine unit 2	7	32
General medicine unit 3	35	96
General medicine unit 4	20	88
Emergency medicine	16	46
Geriatrics	36	30
Internal medicine	4	10
Other	7	94
<b>Specialized clinical setting</b>		
Nephrology	8	16
Pneumology	12	21
Infectious diseases	14	24
Gastroenterology	8	28
Diabetology-endocrinology	7	26
Immunology	3	12
Rheumatology	12	27
Cardiology	20	59
<b>Intensive care units</b>		
Pneumology	10	12
Cardiothoracic	2	12
COVID hospital	4	4
<b>Surgical setting</b>		
Traumatology	20	69
Emergency surgery	18	46
Other settings (no COVID)	0	368
<b>Total</b>	<b>273</b>	<b>1,165</b>

COVID, coronavirus disease; ICU, intensive care unit; AOUP, Azienda Ospedaliera Universitaria Pisana.

(HCWs) should receive additional training in the use of personal protective equipment (PPE) and designated location for donning and doffing of PPE by the HCWs were established (6).

The abovementioned Tuscany directive was implemented in AOUP by establishing a COVID dedicated micro-area

in many wards, allowing thus to admit and treat patients positive for SARS-CoV2 but asymptomatic, for diagnoses other than COVID.

These micro-areas are small part of medical, surgical or ICU, functionally isolated to prevent further transmission of SARS-CoV2 to other patients and HCWs.

This setup allowed AOUP to set up a total of 273 COVID beds, organized in 8 micro-areas of medical setting (135 beds); 8 micro-areas of specialized clinical setting (84 beds); 3 micro-areas of ICUs (16 beds) and 2 micro-areas of surgical setting (38 beds) (Table 1). Overall, 273/1,165 (23.4%) of total beds number were dedicated to COVID patients.

This new organization requires any patient of one of these micro-areas developing new symptoms related to infection and respiratory or systemic involvement, to be transferred to COVID-19 specific areas (medical units or ICUs).

The safety of other patients in the same ward is guaranteed by routine monitoring, with nasopharyngeal swab at admission, every 7 days of stay and at the discharge. Positive patients are submitted to nasopharyngeal swab at the admission and every 4 days as described elsewhere (7,8).

The establishment of COVID micro-areas creates logistical and organizational challenges, in terms of adequate staffing, HCWs training and PPE supply to name a few.

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