Dear Editors,

The new coronavirus disease (Covid-19) and related virus (2019-nCoV or Sars-Cov-2) which were identified in Wuhan, China, in late December 2019 manifested themselves as a rapid regional epidemic and have since escalated into a pandemic, as declared by the World Health Organization (WHO) on 11 March.

In Italy, in the period between 30th January, when the first two Covid-19 cases were confirmed, particularly after 18th February, which is when the first secondary transmission case was detected, and 4th May, which marks the beginning of Phase 2, the infection spread diffusely, with more than 211,000 cases, including 29,079 deaths.

The first epicentres were in four Italian regions, namely Lombardy, Veneto, Emilia-Romagna, and the Marche.

In the period between the end of February 2020 and the end of March 2020, the virus pandemic was particularly violent in northern and central Italy.

In the 2 weeks after the first cases of Covid-19 disease were reported in northern Italy, our teaching and university hospital in Ancona, in the Marche region, which has about 1000 beds and serves a neighbouring area of 1.5 million people, had to re-organise the whole process of patient admission and flow. Patients were hospitalised in isolated areas depending on the intensity of the symptoms of Covid-19.

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In particular, in compliance with American society of plastic surgeons and società Italiana di chirurgia plastica ricostruttiva ed estetica recommendations, plastic surgeons and related Wound Healing Center temporarily closed the outpatient department, postponing all elective procedures and limiting activities to only some procedures, with complete rearrangement of elective surgery, while still ensuring adequate care to patients with skin and soft tissue loss of substance or ulcers.

The Plastic and Reconstructive Surgery Department was re-located to a surgical area with other surgical specialties and with a Covid-free logistical path, and the management of patients of the department was completely separated from that of patients of the Wound Healing Center.

Admissions to the Wound Healing Center were allowed again after 2 weeks, but only for urgencies like infections, posttraumatic, or postoperative wound complications related to the pre-Covid phase.

The percentages of patients’ follow-up visits dropped by 70% as a consequence of the Italian national lockdown imposed on 9 March 2020 and because of patients’ fear. In this period, we observed strict safety protocols every time a patient, attendant, or health worker entered the Wound Healing Center. Personal protective equipment (PPE), including masks, glasses, and protective suits, were adequately used.

In the first period (March to late April 2020), we replaced the visits of patients with chronic ulcers or subacute injuries with telephone or online consultations for both external and internal patients, without interrupting the service. This caused an increase in requests and, above all, a lengthening of ready availability times, including evening hours and weekends.

We kept the medical and nursing teams active by alternating shifts, so as to allow both doctors and nurses to rest every other week and keep the possible onset of Covid-19 symptoms under control. A total of 96 and 134 outpatient visits were performed in March 2020 and April 2020, respectively, while the hospital consultations given were 62 in March 2020 and 112 in April 2020. In the period from March to April 2020, outpatient visits rose from 12% to 48%, while hospital consultations grew from 35% to 40%, all performed telematically.

Working times changed because of the telemedicine control methods used. A telemedicine consultation requires on average a 25-minute visit, due the difficulty in making and answering questions without the presence of staff in the virtual room. Moreover, clinical consultations are in some cases limited because of technical
issues. However, through telemedicine, the quality of clinical consultations is often good and the management of preventive and therapeutic devices and dressings used at home can be clearly seen. Of course, the level of training of care givers, who most of times are close family members, is very important.

The Wound Healing Center worked on three lines of action. The first line was to maintain the activity with outpatients for the most serious cases and give immediate answers to the local care network for chronic cases, all day, all week (100% patients by telemedicine). The second line was to refer urgencies (infections, diabetic foot, vascular complications, posttraumatic, or postoperative complications) to the second or third level of Rete Vulnologica Marchigiana, a multi-professional network of experts and health workers specialised in wound healing that was created in 2016 and has been effective ever since. Thanks to the work of 13 expert multidisciplinary teams, only three urgent cases were detected and centralised to the third level Wound Healing Center (100% patients seen by telemedicine).

The third line was activated for internal patients, who were mostly Covid-19 patients.

Wounds and sub-acute lesions in patients from internal Covid-19 wards were different from normal wounds and lesions in terms of quality and severity. All of them were pressure ulcers related to Covid-19 disease intrinsic mechanism, which affects alveolar and vascular structures and causes a peripheral hypo-oxygenation mechanism, which leads to aggravated and rapid peripheral tissue ischemia (Figures 1 and 2). We had a large number of requests after 20 days from the Italian national lockdown (late March and April) for wounds and lesions involving both normal and exceptional anatomical sites: sacral, heel, and face and pectoral wounds because of prone positioning in ventilatory alternation protocol. Despite the use of standard care and prophylaxis procedures, all of them were stages IV and V.

The procedure we adopted was the only way to avoid having Covid-19 cases in the multidisciplinary team of the Wound Healing Center in the first 2 months of the pandemic.

With regards to the organisation of the Wound Healing Center outpatient activity, the transition to Phase 2 of the emergency which started on 4th May 2020.

Thanks to this experience, by sharing ideas and experiences with the network Rete Vulnologica Marchigiana through regular telemelical meetings, we have reorganised protocols for emergency triage and chronic treatment, which we will continue to use. At the same time, we have decided to maintain the same organisation with the 13 wound healing centres and the three different levels of care.

**FIGURE 1** Mental pressure ulcer because of Covid-19; continuous positive airway pressure (CPAP) ventilation mask damage

**FIGURE 2** Occipital lesion in a Covid-19 patient: pressure ulcer in a intubated patient after the use of a forced ventilation helmet
We will continue to observe all the PPE measures provided for health care professionals and patients and transportation, in compliance with national and international WHO guidelines. Therefore, we will allow access to a maximum number of 12 people every 6 hours, with a maximum time of 30 minutes per patient. To avoid gatherings, the staff will warn patients not to go to appointments too early and to leave at the given time.

CONFLICT OF INTEREST
The authors declare no conflicts of interest.

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