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## COVID-19 RAPID COMMUNICATION

# Letter from Italy: First practical indications for radiation therapy departments during COVID-19 outbreak



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Received Mar 16, 2020. Accepted for publication Mar 16, 2020.

## Introduction

The number of people infected by SARS-CoV-2 is dramatically increasing worldwide.<sup>1</sup> The first person-to-person transmission in Italy was reported on February 21, 2020, and led to an infection chain that represents the largest outbreak outside Asia to date.<sup>2</sup> As of March 12, 2020, in Italy, there are 10,590 positive patients, 827 deaths, and 1045 healed, with numbers varying from hour to hour. The COReNA VIRUS Disease 19 (COVID-19) incubation interval varies from 5 to 14 days.<sup>3</sup> On January 30, 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a public health emergency of international concern, and the Italian government declared a public health emergency the next day.

In the first phase, the government defined areas at different risk of infection: (1) high risk (“red zone or level 1 risk zone”); (2) mean risk (level 2 risk zone); and (3) the rest of the national territory, to be on alert but considered at

low risk (level 3 risk zone). In the subsequent phases of the crisis, following the indications of a scientific and technical committee and in agreement with the WHO, the government finally decided to extend the “red zone” to the whole nation (March 8, 2020). All public hospitals faced an unprecedented emergency, with drastic changes in all organizational processes. All patients with cancer were consequently involved at different levels.

We here report the experience of a group of Northern Italy radiation therapy departments that are located inside or very close to the first red zone and thus were the first to face the emergency. The main problem was how to continue activity while protecting patients, families, and health professionals from COVID-19. The authors met virtually with other radiation oncologists (see Acknowledgments) to share experiences and possible solutions, which were defined according to the local and national health authorities’ indications.

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Disclosures: none.

**Acknowledgments**—The authors wish to thank the following Italian radiation oncologists who contributed in extending these preliminary recommendations: Roberto Tortini (Lodi), Sandro Tonoli (Cremona), Michela Buglione di Monale e Bastia (Brescia), Giovanni Mandoliti (Rovigo), Giampaolo Montesi (Rovigo), Stefano Pergolizzi (Messina), and

Anna Merlotti (Cuneo). The authors also wish to thank all clinical oncologists (medical, radiation, hematologists) who indirectly contributed to this document by exchanging personal experiences, and who are fully dedicated to cure cancer patients during COVID-19 emergency, as well as the whole staff of our departments (therapists, physicists, nurses, administrative staff) who keep working in difficult conditions to ensure radiation therapy delivery to Italian patients.

The indications we propose are structured as (1) definition of priorities, (2) problem analysis, and (3) suggested solutions.

## Priority 1: To Ensure Radiation Therapy Delivery To Patients with Cancer

### Problem analysis

Radiation therapy is a life-saving treatment and should be guaranteed to all patients with cancer for whom it is indicated.<sup>4</sup>

### Suggested solutions

Regional and hospital management must ensure the full functioning of Italian radiation therapy facilities, even in emergency conditions.

## Priority 2: To Ensure Safety of Health Professionals, Patients, and Caregivers

### Problem analysis

A widespread infection among the staff working in a radiation therapy facility would effectively result in the closure of part of the activities. Failure to identify suspected or infected patients would increase the risk of spread to operators and patients undergoing treatment.

### Suggested solutions

1. If a triage point at the entrance to the hospital has not been activated, the indication is to carry out triage at access to the radiation therapy department to verify possible contact with COVID-19–positive patients and evaluate suspected symptoms in all others (patients, caregivers) accessing radiation therapy areas.
2. Provide a hydroalcoholic solution for hand disinfection at the entrance of the radiation therapy center.
3. Wear surgical masks, as recommended for all health professionals and patients according to WHO indications<sup>5</sup> and in particular if (1) the operator has respiratory symptoms, to protect others; and (2) if the

operator is in close contact with a person who has respiratory symptoms, to protect herself or himself.

4. Use sterile disposable overalls (tunic and trousers), sterile disposable gown, FFP2 masks, clogs, and overshoes when treating patients with highly suspected or verified COVID-19, if they need to continue radiation therapy according to medical indications.

## Priority 3: Management of COVID-19 Suspected or Positive Patients

### Problem analysis

We need practical guidelines on the appropriate behavior in the case of symptomatic, suspected, or verified COVID-19 patients accessing radiation therapy facilities. The triage evaluation should immediately report to the appropriate internal structures all patients who have symptoms possibly related to COVID-19, according to the existing regional regulations.

### Suggested solutions

1. If the patient has a cough, fever, or dyspnea owing to pre-existing morbidity, the patient should wear a protective mask, and radiation therapy should be continued.
2. If a new patient has confirmed COVID-19, do not start treatment.
3. If a patient on treatment is suspected to have onset of typical COVID-19 symptoms (cough and/or fever and/or dyspnea) and is waiting for diagnosis, stop treatment.\*
4. If a patient on treatment is positive and is symptomatic, discontinue treatment.\*
5. If a patient on treatment is positive but is asymptomatic, discontinue treatment.\*
6. If a patient had confirmed COVID-19 but is declared healed by the infectious disease team, carefully plan to start or restart treatment according to cancer-related clinical conditions.

If possible, COVID-19 patients should be treated at the end of the linear accelerator shift to limit the chances of infection for other patients.

\* Patients may continue treatment only in selected cases if their general medical conditions are not compromised by COVID-19, if their cancer requires the continuation of radiation therapy, if it is permitted by

local health authorities, and with the use of adequate disposable protective equipment. We suggest a personalized clinical assessment.

For confirmed COVID-19 patients (or patients waiting for diagnostic confirmation), the waiting and bunker areas should be sanitized at the end of the treatment session.

## Priority 4: Staff Reorganization

### Problem analysis

It is necessary to avoid the usual professional behavior that favors the aggregation of all professional figures (medical doctors, nurses, therapists, physicists, administrative staff) working in the radiation therapy facility.

### Suggested solutions

Medical, technical, nursing, physics and administrative staff must operate in separate areas, avoiding meetings that cannot ensure the safety distances required for prevention.

In the event of infection of health professionals and therefore in the case of a severe shortage of staff:

1. report the current situation to the hospital management for help in solving the problem (eg, hiring new staff);
2. connect with other radiation therapy centers for external personnel to avoid interruption of ongoing therapies;
3. call for the service of retired personnel following the procedures already defined by the administrations;
4. redistribute patients to available machines—variation of fractionation, when feasible, is advised.

## Priority 5: Reduction of Patients' Access to Radiation Therapy Facilities

### Problem analysis

It is advisable to limit the patients' access to the radiation therapy departments while maintaining optimal care conditions.

### Suggested solutions

1. Adopt hypofractionated regimens when possible.
2. Postpone follow-up visits.
3. Use palliative medical treatments at home instead of radiation therapy, when deemed to be of similar efficacy.
4. Delay nonurgent and deferrable radiation therapy treatments for patients with a better prognosis (eg, adjuvant

radiation therapy for patients with breast cancer, radical radiation therapy for patients with low/intermediate-risk prostate disease).

5. Postpone therapies for benign and functional diseases.

## Discussion

The COVID-19 spread in Italy was initially subtle and then unexpectedly rapid in its expansion. Because the first affected regions (especially Lombardia) were characterized by a very high population density, the virus dramatically spread throughout Northern Italy in a few weeks. As a consequence, all cancer therapy flows were altered: surgery, systemic therapies, and radiation therapy. The radiation therapy centers located in the hospitals that were the first to face the emergency gained rapid field experience and started monitoring the situation and collecting data.

This report presents a few practical suggestions from the first 2 weeks of collective work under emergency conditions and is the result of a joint effort to ensure continuity of therapies while protecting patients, health professionals, and the general population. The indications were integrated with the WHO recommendations and with the local health authorities' guidelines. The primary aim was to share information and provide guidance to radiation therapy departments worldwide. The report is mainly focused on how to deal with symptomatic, suspect, or confirmed COVID-19 patients undergoing radiation therapy. We identified five key priorities, here described, together with a brief analysis of the problems and the possible solutions.

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