



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Short communication

## Mental Health Services in Lombardy during COVID-19 outbreak

Mauro Percudani<sup>a</sup>, Matteo Corradin<sup>b</sup>, Mauro Moreno<sup>b</sup>, Annamaria Indelicato<sup>c</sup>, Antonio Vita<sup>d,\*</sup><sup>a</sup> Department of Mental Health and Addiction Services, Niguarda Hospital, Milan (I)<sup>b</sup> Healthcare Management, Niguarda Hospital, Milan<sup>c</sup> Social-Healthcare Management, Spedali Civili Hospital, Brescia (I)<sup>d</sup> Department of Mental Health and Addiction Services, Spedali Civili Hospital, Brescia, and University of Brescia, School of Medicine

## ARTICLE INFO

## Keywords:

Lombardy  
Psychiatric services  
Coronavirus disease 2019

## ABSTRACT

Lombardy is the Region in Italy the most heavily affected by coronavirus disease (COVID-19) contagion. The Regional Health Authority mandates that mental health services should be guaranteed, identifying mental health as a priority for their citizens. Recommendations for occupational and health safety have been provided to patients and hospital staff, including support for telemedicine activities and remote psychosocial interventions. Services of the Mental Health Departments of Milano “Niguarda” and Brescia “Spedali Civili” Hospitals are providing continued care at a community, residential and hospital level, and to positive COVID-19 psychiatric patients in need of hospitalization.

## 1. Introduction

Coronavirus disease 2019 (COVID-19) contagion has created a state of emergency in Italy since February 2020. The Lombardy Region in the northern of Italy has been the most heavily affected. The Italian Government in response, implemented extraordinary measures to limit viral transmission on the 8th March 2020. These included restricting movement of persons in this Region, with the intent of minimising transmission of the virus from infected individuals to healthy ones. The measures introduced have recently been judged courageous and important, although not enough incisive (Remuzzi A and Remuzzi G, 2020).

Lombardy is the largest and the most affluent Region in Italy, with a population of more than 9 million people. On the 28th March 2020, the Italian National Institute of Health reported 39.415 infected, 12.471 hospitalised, 5.944 deaths ([www.epicentro.iss.it](http://www.epicentro.iss.it)). The estimated number of infected cases is considered to be greatly underestimated due to the undocumented asymptomatic or mildly symptomatic cases. There is no known published data regarding Coronavirus disease 2019 in subjects with mental disorders, including those in treatment, at present.

Public Mental Health Services in Lombardy has 27 Departments for Mental Health and Addiction Services and a number of private residential facilities. A single Department consists of a network of mental health services for all the hospital, community and residential activities in a given area. Public psychiatry services provide all prevention and therapeutic activity, this includes emergency response and hospital

admissions, community and rehabilitation activities both in outpatient services and inpatient residential facilities, and support for social inclusion (Fattore et al., 2000).

On 8th March 2020, with the reorganization of the entire Healthcare system to deal with COVID-19, Regional Health Authorities recognized mental health as a priority and authorized the continuation of mental health services for the general population. Safety guidelines for both medical staff and patients were implemented, this includes remote psychosocial interventions and telemedicine. Hospital admissions for acute psychiatric disorders in patients positive for COVID-19 need a dedicated area in the psychiatric ward or alternatively, a medical ward supported by psychiatric staff.

## 2. Organisational Strategies

Psychiatric Services in Lombardy have been working to guarantee continued services both on the community and residential level, and to guarantee hospitalization for acute cases positive for COVID-19. Niguarda Hospital, Milan and the Spedali Civili Hospital, Brescia, while taking into account all advices of local Crisis Units, are sharing plans in prioritizing the following services since the end of February 2020.

## 3. Community Mental Health Care

The activity in the Mental Health Centers has been maintained in patients suffering from serious mental disorders as well as in those with

\* Corresponding author.

E-mail address: [antonio.vita@unibs.it](mailto:antonio.vita@unibs.it) (A. Vita).<https://doi.org/10.1016/j.psychres.2020.112980>

Received 30 March 2020; Accepted 31 March 2020

Available online 12 April 2020

0165-1781/ © 2020 Elsevier B.V. All rights reserved.

serious social problems or judicial sentences. For these patients, the activity has been maintained with particular attention to clinical monitoring and drug administration. On-site appointments is established at a pre-scheduled time thus avoiding close contact in the waiting rooms. At each visit, the indications for limiting the spread of the infection are explained and illustrated. Home interventions and off-site activities are only provided for urgent situations. The activities involving the patients' family members are reduced to only those deemed essential, and have been replaced by audio or virtual communication. Network activities with external Institutions have been maintained using available communication resources. For new and emergent cases, triage is done over the telephone to understand the urgency of care, and when required, an appointment is scheduled. Over the telephone, triage is also provided for identifying possible medical symptoms or suspected contagion. The work within Residential Psychiatric Facilities continued as normal although external activities were suspended, including home leave and temporary permissions and visits of relatives. Monitoring for respiratory and other Covid-19 symptoms, including temperature, was carried out daily.

#### 4. Hospital and Acute Care

Mental health emergency and hospital admission services have been maintained in collaboration with the Emergency Department of each hospital. Psychiatric hospital activity for patients negative for Covid-19 has been maintained as usual. Psychiatric wards have also been organized with dedicated areas for Covid-19 positive patients with acute psychiatric disorders and no severe medical symptoms. Staff has been equipped and trained in using individual protective equipment provided for direct care of Covid-19 patients and of suspected cases, with fever or other symptoms of Covid-19 infection. In this area, a filter room was set up for dressing and undressing. A behavior protocol has been established at Niguarda Hospital for the definition of appropriate multidisciplinary care pathways in collaboration with Units of Infectious Disease, Anesthesia and Intensive Care .

#### 5. Assessment and clinical pathways for hospital care of acutely ill psychiatric patients

At the Niguarda Hospital in Milan, from March 9<sup>th</sup> to 28<sup>th</sup>, 2020, 15 Covid-19 positive patients with acute psychiatric disorders were hospitalized (11M, 4F; mean age 42.5 years; 6 Psychoses, 5 Bipolar Disorders, 2 Personality Disorders; 1 Cognitive disorder; 1 Mental retardation). A psychiatric ward was dedicated to Covid-19 positive cases and a protocol for treatment of these patients was implemented. Infectious Diseases Unit carried out an initial assessment, providing therapeutic and diagnostic indications, and daily follow-up consultations with 24 hours availability had been established. Anaesthesia and Intensive Care Units evaluated the patients on hospital admission for eligibility to therapeutic upgrade and were alerted when there was clear evidence of respiratory distress, FR > 30 acts/minute, SatO<sub>2</sub> < 93-92%, or when the PaO<sub>2</sub>/FiO<sub>2</sub> ratio was < 300 mmHg on blood gas analysis. Hospitalization in the intensive care unit (ICU) was provided for patients with severe respiratory distress. Among the 15 patients admitted, 3 patients resulted asymptomatic for Covid-19 infection; 4 patients developed symptoms negative for respiratory distress; 8 patients developed bilateral pneumonia, with 4 requiring oxygen therapy. Two patients were temporarily transferred to the ICU.

From the psychopathological point of view, patients were evaluated at the time of admission, every seven days after admission and at discharge with both general and disease-specific rating scales. A follow-up was scheduled at 30 days after discharge. Antipsychotic drugs have been prescribed with special attention to their cardiologic safety profile (QTc prolongation). Benzodiazepines have been prescribed using short half-life medications due to the lower risk of respiratory depression. Prescriptions of psychotropic drugs followed recent Italian

recommendations (Ostuzzi et al., 2020).

#### 6. Concerns for the near future and the need for action

People with a mental disorder and patients in contact with mental health services represent a population at risk for Covid-19 infection (Zhu et al., 2020a). The low awareness of these patients of the risk and the transmission of the infection, especially in the acute phase, as well as the low adherence to precautionary measures (i.e. social distancing, frequent hand-washing, circulation restrictions and home isolation) may contribute to the risk. Moreover, people with severe mental disorders are also at higher risk of medical (cardiometabolic) comorbidities that may further increase the morbidity of Covid-19 infection.

The psychosocial response to an event of this magnitude is complex. Different studies show that in an early phase of the severe acute respiratory syndrome (SARS) outbreak, a range of psychiatric morbidities may occur, including persistent depression, anxiety, panic attacks, psychotic symptoms and even suicide (Xiang et al. 2020). Furthermore, some evidence suggests that the psychological impact of quarantine is wide-ranging, but may be relevant and long-lasting (Brooks et al., 2020). These considerations may be particularly relevant for people with mental disorders and their families, but may also apply to the general population.

Moreover, a great deal of evidence demonstrates the dramatic psychological impact of the epidemic on healthcare workers, and the importance of dedicated interventions to deal with anxiety and stress. Among healthcare workers, a significant percentage of psychiatric symptoms was found, 29.8% for stress, 13.5% for depression and 24.1% for anxiety (Zhu, et al, 2020b).

Maintaining continuous monitoring of patients in contact with mental health services is essential for a careful assessment of their condition from both a psychopathological and medical point of view. In accordance with recent papers (Carvalho et al., 2020), a community mental-health team, including psychiatrists, psychologists, nurses and other mental health workers, should be activated in each catchment area to provide support to patients, healthcare workers, and the general population.

#### Authors' contribution

The Authors contributed equally in the preparation and revision of the manuscript.

#### Declaration of Competing Interest

The Authors declare that they have no competing interests.

#### Acknowledgements

The Authors wish to thank all the clinical staff of the Departments of Mental Health of the Niguarda Hospital and the Spedali Civili Hospital, Adelaide Panariello for her help in drafting the manuscript, and Maruska Nizzi for the revision of the text.

#### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.psychres.2020.112980](https://doi.org/10.1016/j.psychres.2020.112980).

#### References

- Brooks, SK., Webster, RK., Smith, LE., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J, 2020. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet* 395, 912–920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8).
- Fattore, G., Percudani, M., Pugnoli, C., Contini, A., Beecham, J., 2000. Mental health care

- in Italy: organisational structure, routine clinical activity and costs of a Community Psychiatric Service in Lombardy Region. *Int. J. Soc. Psychiatry* 46 (4), 250–265.
- Ostuzzi, G., Amaddeo, F., Michencigh, G., Fagiolini, A., Imperadore, G., Barbui, C., 2020. Indicazioni pratiche sull'uso degli psicofarmaci in pazienti affetti da COVID-19. [www.siep.it](http://www.siep.it).
- Carvalho, PMM., Moreira, MM., De Oliveira, MNA., Landim, JMM., Neto, MLR., 2020. The psychiatric impact of the novel coronavirus outbreak. *Psychiatry Res* 286, 112902. <https://doi.org/10.1016/j.psychres.2020.112902>.
- Remuzzi, A., Remuzzi, G., 2020. COVID-19 and Italy: what next? *Lancet*. [https://doi.org/10.1016/S0140-6736\(20\)30627-9](https://doi.org/10.1016/S0140-6736(20)30627-9). March 12, 2020.
- Xiang, YT., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., Ng, CH., 2020. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry* 7 (3), 228–229. [https://doi.org/10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8).
- Zhu, Y., Chen, L., Ji, H., Xi, M., Fang, Y., Li, Y., 2020. The Risk and Prevention of Novel Coronavirus Pneumonia Infections among inpatients in Psychiatric Hospitals. *Neurosci. Bull* 36 (3), 299–302. <https://doi.org/10.1007/s12264-020-00476-9>.
- Zhu, Z., Xu, S., Wang, H., Liu, Z., Wu, J., Li, G., Miao, J., Zhang, C., Yang, Y., Sun, W., Zhu, S., Fan, Y., Hu, J., Liu, J., Wang, W., 2020. COVID-19 in Wuhan: Immediate Psychological Impact on 5062. Health Workers. Cold Spring Harbor Laboratory Press, Yale. <https://doi.org/10.1101/2020.02.20.20025338>. medRxiv 2020.02.20.