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Facing in real time the challenges of the Covid-19 epidemic for rehabilitation

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The Covid-19 epidemic started in China, where it has been contained through a total quarantine model, stopping all activities in the affected regions. After South Korea, where a specific technological system has been set in place allowing to contain the epidemic, Italy has been the second hardly hit country, the first in Europe. Italy has a complete and well-developed rehabilitation system in place according to European standards,[1,2] from the acute to the long-term phase, from inpatient to home-based provision. Italy is consequently facing the impact of Covid-19 on rehabilitation services with a full picture.[3] During the expansion in Italy, the World Health Organization declared the pandemic,[1] and now all countries in Europe are reporting confirmed cases of Covid-19, being between 1 and 4 weeks behind Italy. In these days, Italian PRM physicians are receiving questions from all over Europe, but also in the Country exists the need for a better understanding.

The epidemic is putting unprecedented pressure on the Italian health system. The Northern regions are most affected, but worrying signs are coming from the Southern part of the country. At onset, the disease had a huge impact on the acute care area (e.g. Intensive Care Units – ICU) as well as on primary care. Over the days, the post-acute care area and the specialized home-and-community services, including rehabilitation, have been increasingly involved.

Some epidemiological characteristics seem to have particular and significant influence on the rehabilitation sector:

- The rapid (and partly unpredictable) spread of the disease;

- The significant differences in the various areas of the country: the number of cases and the propagation speed vary between regions, but also within each region and even within smaller geographical areas.

Other aspects to be considered are:

- Differences in the general organization of healthcare and social services, leading to different policies and ways of clinical management (e.g. rate of admissions in ICU, availability of subacute wards or specialized home care services…);
- Differences in the characteristics and distribution of the rehabilitation services: e.g. in the availability of rehabilitation units/beds within the general hospitals, in close contact with the acute wards, or in the size and specific expertise of the freestanding rehabilitation hospitals, as well as in the possibility to provide home and community services after discharge.

These factors imply that the pressure and the impact on rehabilitation services are continuously and rapidly varying over time and in different local circumstances.[4] These include, in a totally partial and provisional list:

- Support to ICU by providing early transfers after the acute critical phase
- Organization of separate areas/pathways for Covid-19 affected and non-affected patients in the same rehabilitation ward/hospital and need of finding a new balance everyday
- Tension between the contrasting needs of reducing contacts/exposure for patients and continue to provide services for people experiencing disability (to prevent future disability), or persons with disability or frailty
- Tension between the general aim of social reinsertion of people experiencing disability and social restrictions due to quarantine
- Consciousness of providing services to many frail patients with risk factors and comorbidities, possibly at high risk if affected by Covid-19 – this could impact decision making in case of scarce services and in the end-of-life phase
- Degree of personnel shortage because of the disease.
- Need of reconversion of health professionals into Covid-19 experts.
- Continuous changing guidelines and training needs for professionals out of their usual rehabilitation expertise.

One lesson we're learning is that the organization of care and of the responses to the specific needs of the Covid-19, as well as of the non- Covid-19, patients is not correlated with the clinical picture only. It is also heavily dependent on the local organization of the network of services and the type of pre-existing relationships between the acute care and rehabilitation units, and the home and community-based services,

including primary care. This is true for rehabilitation in general, but much more evident in the present circumstances.[5]

In such situation rehabilitation professionals, as many others, have the feeling of navigating in unknown waters. Awareness is emerging that many usual sources of information and scientific knowledge, like reviews, guidelines, or recommendations, may be useful but insufficient in facing the present scenario.[6] Indeed, many of them have proven to be outdated in few days or weeks or have to be modified according to specific local needs or unpredictable circumstances. A reasonable option to help the rehabilitation professionals is to provide timely and ongoing reports from the field, asking contributions to those who are involved in different phases of the evolution of the epidemic and in different settings or types of services. This could lead to share experiences, get help in avoiding pitfalls, and disseminate good practice examples.

Following the example of other professional communities, like the network of the Italian intensivists (GIVITI), the Italian PRM society (SIMFER) after immediately proposing a first of official document,[3] organized weekly webinars ("Covinars"), to get direct information from rehabilitation teams and services in different areas (Figure 1). This initiative has been proposed by a SIMFER member, Andrea Montis, and is coordinated by one of the authors (PB). Another author (CK) raised the idea to share with the international audience the contents as useful information and material to help the worldwide PRM community to face this unprecedented (in modern time) challenge. Up to now, the Covinars have been much followed and appreciated, with hundreds of live viewers and thousands for the recorded versions. They led to sharing many further remarks, and proved to be a source of useful, practical information as well as a way to maintain the sense of belonging to a professional community and counteract the feeling of loneliness.

There are so many unanswered questions now in Italy, and in the next days/weeks in Europe and the rest of the world, that we consider it as a duty of the EJPRM to provide immediate, albeit provisional responses to the PRM community. For this reason, we started this series of instant papers, collecting the results of the webinars resuming the first clinical experiences in Italy and trying to give some first answers. These answers will have to evolve in time, and we expect other analyses to be provided by our and other journals, but we will also provide clinical questions to researchers for their much-needed help.

Figure 1. Evolution of the Covid-19 epidemic according to the official Italian Health Ministry data, and timeline of (1) the most important restrictions imposed to the population, (2) Italian Society of Physical and Rehabilitation Medicine (SIMFER) initiatives and (3) publications in the European Journal of Physical and Rehabilitation Medicine (EJPRM). Covinar = SIMFER "Covid-19" webinars. Italian government reactions to epidemic: (1) February 24th, 2020: red zones (total quarantine) close to Milan; (2) March2nd: closure of schools; (3) March 8th: travel restrictions; (4) March 11th: total shutdown.

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