Deaths from COVID-19 in healthcare workers in Italy – what can we learn?

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Word count: 600
All authors have read and approved the submission of the manuscript to ICHE.
We declare no competing interests.
No funding to declare.

Summary
This letter examines healthcare worker deaths by category and medical speciality during the COVID-19 emergency in Italy, and underlines factors that may have contributed to the elevated number of fatalities among healthcare personnel. These data are now available because Italy was the first western country to be severely affected. These are matters for urgent discussion as development goes forward.

Keywords:
COVID-19; deaths; PPE; hospital infection; healthcare workers; nursing-care homes; non-hospital healthcare
The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic is imposing a significant burden on healthcare systems worldwide. The Italian National Institute of Health (ISS) on April 16 reported that 16991 healthcare workers had tested positive for the virus, with a median age of 48 years, 68% female and 32% male (in line with the ratio in the Italian healthcare system: 66.8% female and 33.2% male). The infected healthcare workers account for 10.7% of the total number of positive cases (n=168941).

Since the first case of the outbreak on 21 February, the number of healthcare worker deaths has risen dramatically. On April 17 the latest estimate of medical doctor deaths reached 119 which is 57.8% of total healthcare worker deaths; followed by nurses 16.5% (n=34), nurse aides 8.3% (n=17) and dentists 5.8% (n=12) (Fig.1). The COVID-19 related deaths include two nurses who committed suicide due to unsustainable pressure at work. No other country has seen the same elevated number of doctor deaths; China, where the epidemic began in December, had fewer. General practitioners seem to be the worst hit amongst all medical specialities, registering 32% deaths (n=66) (Fig.1). This could reflect their presence in the first line of defence for anyone presenting with the first symptoms.

Data available from the ISS on confirmed cases and deaths by age distribution suggest that 34% of the total health personnel testing positive (n=16953) fall into the 50-59 age group and 28.2% in the 40-49. Of healthcare deaths, 43.3% are recorded in the group aged 60-69, and 26.7% in the group aged 50-59. The 70-79 age group recorded 20% of health workers deaths (12.6% case fatality rate).

On April 9 the ISS ran a retrospective epidemiological analysis of the number of infected health workers by category, care context and site where the infection presumably occurred, together with type of activity carried out at the time of infection. Data are available for 16179 out of the total of 16991 healthcare workers confirmed positive for the virus. Nurses and midwives together are the most represented with 43.2% (n=6988) of all infected healthcare workers, followed by doctors 22% (n= 3574) divided between hospital doctors 19% (n=3071), general practitioners 0.8% (n=130) and other doctors 2.3% (n=373). As for the health care context in which the infections presumably occurred, data are available for 11738 health workers; of these, 70.9% have contracted COVID-19 by serving in hospitals or in emergency care services (ambulance assistance).

Interestingly, according to the National Federation of Orders of Surgeons and Dentists (FNOMCeO) registry, General Practitioners accounted for the highest number of deaths among the health workers (Fig.1) despite being the least infected group (as reported by the latest ISS analysis). Furthermore, according to the National Federation of Professional Nursing Orders (FNOPI), 32% of the nurse deaths by April 16 were on duty in nursing care homes where personal protective equipment (PPE) was mostly lacking and 50% were working in non-hospital healthcare facilities.

The sheer intensity of the COVID-19 outbreak in Italy, the recruitment of elderly retired doctors and shortages of PPE, particularly in non-hospital care, might be among relevant factors contributing to the elevated number of fatalities among healthcare workers in this country. Therefore, it is essential to carry out another retrospective epidemiological investigation and a prospective study to identify the main risk factors contributing to COVID-19 related deaths in the different health worker categories in order to produce viable schemes for their protection. At this point, what lesson can other countries learn from the Italian sacrifice? Protecting and testing healthcare workers must be a top priority; governments will not be forgiven for needless deaths.
References


Figure 1. Healthcare worker deaths from COVID-19 outbreak in Italy by category and medical specialty.*

* Latest data are from the Italian National Federation of Orders of Surgeons and Dentists (FNOMCeO), the National Federation of Professional Nursing Orders (FNOP), Italian Federation of Pharmacists (FOFI), National Federation of Medical Radiology Technicians, Technical Health Professions, Rehabilitation and Prevention Orders (FNO-TSRM-PSTRP), National Federation of Health and Social Health Professions (MIGEP). Data accessed April 17 2020.