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Recently a predictive model of the way the infection could spread in India was published by Singh and Adhikari [3]. Emphasizing the importance of social distancing as the only effective tool against COVID for now, they have formulated various predictive models based on Bayesian imputational analysis.

Their recommendations are very clear. For the lockdown to be effective, there are only two approaches:

- 1) Extend the lockdown to a total of 49 days or
- 2) Phased lockdowns of 21, 28 and 18 days with intervening periods of 5 days of suspension.

Both the models seem to suggest effective control of spread of infection [3].

Even if mathematical models are not convincing enough, we need to look at the other side of the available statistics. At the time of writing this article, India has tested 114,015 people out of which 4616 have been reported to be positive [4]. Considering the strength of iceberg phenomena in India, one should not draw any delusive contentment from these statistics.

Seventeen cases and three fatalities [5] out of the largest slum dwelling in India-Dharavi, with a population density of a staggering 870,000/mile<sup>2</sup> (335,907/km<sup>2</sup>) [6], is a data set that should be a cause for serious concern.

India is yet to visualize the true impact of this pandemic. Using the current statistics to formulate epidemic control policy would be equitable to running in the blind. If the government decides to end the lockdown as planned, it could spell doom for the entire country. The mortality numbers in Italy and Spain would seem like specks of dust. As clinicians, we should be building surge capacities for the time when the lockdown is lifted. This lockdown is the dam holding back a flood. Once it breaks, our entire healthcare system, public and private, will drown in the torrent that follows.

The most pragmatic way to deal with this pandemic is what is being done right now—a lockdown. If implemented with integrity, it could prevent this disaster from engulfing a large section of the Indian diaspora.

We live in an extremely connected world. Considering that the Indian lockdown directly concerns approximately 18% of the world's population [7], its impact can go far beyond just the Indian borders.

In the recent years, Indians have taken great pride in the strength that they display in numbers. This population has been the cornerstone of India's phenomenal economic success.

COVID-19 threatens the very foundation of this triumph. A storm is coming. We better take shelter.

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#### The use of personal protective equipment in the COVID-19 pandemic era



Sir,

In the times of SARS-CoV-2 pandemic, particular attention should be paid to personal protective equipment (PPE). Medical personnel protection is of particular importance because of the risk of infecting other members of medical teams, including not only physicians, nurses or paramedics, but also other support personnel necessary to maintain the continuity of care for patients [1,2]. Medical personnel protection is a priority as in their case, infection or even the need for quarantine may pose a real threat to patients.

The weaknesses of health care systems in many countries are now particularly highlighted. Even the highly developed countries with the highest level of health care systems cannot cope with a sudden increase in the number of patients in need of treatment, including, primarily, intensive care with endotracheal intubation and mechanical ventilation [3]. The need to limit therapy to survivors constitutes an enormous psychological burden and moral and ethical challenge; it also triggers a number of negative phenomena among the affected families and the medical personnel themselves [1,4].

The current pandemic is reducing medical resources and requires PPE adaptation to the circumstances and to the scale of the threat to medical personnel [5]. One should remember that it is the most important to follow the general recommendations on hand disinfection and the sequence of procedures when putting on and taking off PPE [6]. It is essential to use masks with a filter, but also goggles and visors to protect the face, as well as double or triple gloves (Fig. 1). Sterile surgical gloves are particularly useful as they are longer.

The optimal solution is to fully protect the entire body surface, isolate it from the environment, and breathe in air from a portable source, but this is not necessary in the case of SARS-CoV-2 [7]. At present, it is recommended to apply various types of equipment, including, in particular, partial protection of the environment through the use of surgical masks or ordinary face masks by persons with confirmed or potential SARS-CoV-2 infection; this may reduce the risk of infecting people in the environment, including medical personnel [3,7].

At present, performing a number of procedures in emergency medicine is associated with additional problems and risks for medical personnel. Emergency physicians, anesthesiologists and intensive care specialists, as well as the relevant scientific societies issue recommendations concerning endotracheal intubation or other procedures dangerous for the medical personnel [1,2]. It should be remembered that endotracheal intubation by using direct laryngoscopy without adequate protection presents a high risk of SARS-CoV-2 infection. The proposed modifications of endotracheal intubation include special preparation of the equipment and medical personnel, using a special protective box, foils applied to the upper half of the patient's body, and the use of indirect laryngoscopy methods, including video laryngoscopy and rapid sequence intubation [8,9]. In this context, it should be emphasized that attempts of prehospital endotracheal intubation by inexperienced personnel constitute a challenge, and supraglottic methods should be



**Fig. 1.** Paramedic wearing personal protective equipment for aerosol generating procedures.

kept in mind. If intravenous access cannot be established or is technically difficult, it is still possible to establish intraosseous access. Performing several procedures in protective clothing is technically difficult and exhausting, which is especially true for CPR. Certain intrahospital procedures must be modified, for example, cardiopulmonary resuscitation in a patient with ARDS in a prone position and electrical defibrillation.

The COVID-19 pandemic poses a huge challenge for emergency teams, as well as physicians in emergency departments. The need for additional protection of the patient and medical personnel may result in a significant delay in the arrival of the emergency team, patient transport, and provision of intended medical care. During any pandemic, people still suffer from various diseases and injuries that require treatment. The need to regroup medical forces and resources should not increase morbidity or mortality from diseases other than COVID-19.

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## Preserving mental health and resilience in frontline healthcare workers during COVID-19



At a normal time, 50% of physicians are battling burnout, or emotional fatigue caused by work related stress [1]. Physician mental health was a reticent, widespread public health crisis prior to COVID-19. Now, healthcare workers are fighting a lethal virus with PPE shortages and no evidence based treatment. Where does that leave the mental state of our healthcare workers?

Healthcare workers are known for their stamina and emotional resilience in the workplace, however, COVID-19 comes with a new set of standards. The pressure of caring for patients is amplified in the setting of a virus with human-human transmission and no specific lifesaving treatment [2]. Handling life and death situations while simultaneously putting one's own life at risk contributes to an actual sense of danger. Other physician and nurse workplace stressors during COVID-19 include extended shifts with increased volume and severity of patients [3,4]. Triage patients while knowing that there are a limited number of ventilators and ICU beds cause emotional and psychological strain [3,5]. Physicians must make critical decisions for their patients in the absence of familial bedside input since visitors are no longer allowed in hospitals. The emotional trauma endured by physicians is intensifying as they witness high volumes of death, including infection and deterioration of coworkers [2].