



# Does Irrational use Lead to a Global Shortage of PPE?

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## Opinion

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## Abstract

Proper use of personal protective equipment (PPE) could play a pivotal role in the protection against Coronavirus Disease 2019 (COVID-19) infection which has shaken global health for almost 10 months now. Due to limited resource, the shortage of PPE has become an alarming issue in the context of the COVID-19 pandemic. In order to ensure an adequate supply of PPE an effective approach could be the widespread adoption of correct and recommended use of PPEs by suitable target groups.

**Keywords:** Coronavirus; Personal Protective Equipment; COVID-19

## Opinion

COVID-19 is highly contagious disease with no definitive cure or vaccine yet in use. The estimated reproduction rate of coronavirus is 2.5 (range 1.8-3.6) [1]. Till now, the recommended measures deemed effective in cutting the chain of transmission include: proper hand hygiene, maintaining respiratory hygiene, avoiding touching of face, mouth and nose without washing hands, regular cleaning of potential frequently-touched surfaces, social-distancing (keeping at least 1 meter/ 3 feet between people) as well as the proper use of PPE appropriate for the given situation [2].

## Components and Recommended use of PPE

The recommended PPE used to battle COVID-19 infection are eye protection, face shield; gloves, gown, surgical mask, respirator, apron and shoe cover [2]. The healthcare providers who deal with the COVID-19 confirmed or suspected cases are recommended to use all of the recommended PPE with N95 or equivalent respirator. Those who deal with non-Covid patients are suggested to wear surgical masks instead of respirators [2,3]. As the disease is at the community level of spread, the general people are also required to wear masks. Patients (suspected and confirmed cases), asymptomatic high-risk population groups, including people with existing co-morbidities, elderly people over the age of 65, as well as

pregnant women, who need to come into contact with care-givers, health-care professionals or family members are recommended to use surgical masks. The rest of the general community can use non-medical fabric masks [4,5].

## Shortage of PPE

The current situation indicates that there is a global shortage of PPE, especially for masks and gowns. The escalating number of people infected with COVID-19, together with stockpiling as well as inappropriate use of PPE has given rise to its further scarcity globally. It is being observed that healthcare providers are using various combinations of sets of PPEs not in line with authorized recommendations for a particular setting. Gaps in proper knowledge and awareness of the correct or appropriate PPE for a particular segment of society/or situation may be one of many reasons for the emergence of this situation. The market size of personal protective equipment was worth more than \$50 billion in 2019 worldwide, but since the emergence of COVID-19, experts are anticipating that it might exceed USD 80 billion by 2026 [6]. According to WHO estimation, the world needs approximately 89 million medical masks, 76 million gloves, and 1.6 million goggles every month. To meet this demand, UN agencies have shipped 70,660 goggles and face shields,

6,390,400 gloves, 1,035,909 gowns and coveralls, 254,826 N95 respirators and 1,827,315 surgical masks to 23 countries [7]. In addition, there are local productions and private donations adding to this figure daily. To satisfy the increasing global demand, the World Health Organization (WHO) called on industry and governments to increase production by at least 40% [8,9].

### Recommendation and Conclusion

Personal protective equipment is an unparalleled component to save ourselves against the COVID-19 pandemic. Although extended or limited reuse of PPE is recommended in certain situations, the use of PPE should be avoided after it has passed its shelf time. It is of utmost importance to minimize the non-urgent procedures or visits that would require the un-necessary use of PPE when and where possible. Dissemination of proper knowledge about the appropriate use of PPE could help combat this crisis. Finally, governments at the local level should ensure strict monitoring with periodic assessment to ensure a balance between the market demand and supply of PPE.

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