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CBmE PANDEMIC ETHICS SERIES

Allocation of Personal Protective Equipment (PPE) among Healthcare Staff

Working Paper 3

This working paper is part of a series written by the Centre for Biomedical Ethics, Yong Loo Lin School of Medicine, National University of Singapore, and is intended to provide information for healthcare professionals and decision-makers on ethical issues arising from the COVID-19 pandemic. The views expressed do not, in themselves, reflect official government policy on these matters. Contributors to the series are listed on the last page.

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Allocation of Personal Protective Equipment (PPE) among Healthcare Staff

Key Ethical Principles

1	Harm minimization	PPE should be distributed so as to minimize infection rates in order to reduce mortality and morbidity from COVID-19 (and other diseases) across the population.
2	Equity	Avoid unjustified distribution (differential treatment) of PPE based on social, economic or demographic factors. This includes unjustified diversion of PPE from equally high-risk routine health services to address COVID-19.
3	Solidarity	PPE should be distributed to reflect the commitment among persons to sharing costs and benefits for the good of a group, community, or nation.

What is an ethical approach to allocation of PPE among healthcare staff within a health system if there is a critical shortage?

1. Personal protective equipment is a public resource that must be responsibly stewarded. This includes reasonable, fair and transparent guidelines for the distribution of PPE.

    A. This working paper focuses solely on distribution *among healthcare staff* within a *health system* and its subcomponents. It does not engage with the further ethical issues associated with distribution of PPE amongst non-healthcare staff within the health system, or between healthcare and other sectors (e.g., distribution to patients, visitors, residential care facilities, workers in dormitories, food service workers).

    B. This working paper covers all staff within the health system who might be at risk, including for example physicians, nurses, medical social workers and cleaners.

2. Allocation should be based primarily on the value of harm minimization.

    A. It is generally recognized that, during the COVID-19 pandemic, allocation of scarce PPE within the health system should be based on the degree of risk to healthcare workers. This relates to both the risk of exposure and infection itself, as well as the risk of harm arising from the infection.

    B. Infection of healthcare workers (HCWs) with SARS-CoV-2 is harmful not only to the workers themselves, but also to patients, their families as well as society at large. An infected worker must be isolated and will generally be unable to continue with provision of direct medical care until the virus clears their system. This directly impacts the ability of the health system to provide adequate care to all patients, as during an outbreak there is likely to be a shortage not only of equipment but also appropriately trained HCWs.

3. Risk of exposure and harm will vary along several dimensions:

    A. Type of clinical encounter (e.g., physical examination, intubation, transporting patients, screening patients, cleaning surfaces; see WHO guidance document referenced at the beginning of this document for detailed breakdown).

    B. Whether the encounter involves patients with confirmed COVID-19, patients whose status is not confirmed, or other patients.

    C. Patient characteristics which may increase risk of exposure (e.g., agitated or violent patients, incontinent etc.).

D. Healthcare worker characteristics which may render them more susceptible to harm if infected (e.g., older age, severe immunosuppression, pregnancy, other co-morbidities).

4. It will be impractical to precisely rank the risk of all specific staff-patient interactions or activities. Pragmatically, broad risk banding would be appropriate (e.g., division into high, medium and low risk).

5. PPE should be distributed across the health system to minimize the risk of all infectious diseases.

A. Distribution of PPE should be evidence based and driven by the principle of harm minimization; and allocation policies should be updated as more evidence becomes available.

B. In line with the principle of equity, diversion of PPE from other disease applications in order to protect against COVID-19 transmission should only occur when the risk of exposure and harm from COVID-19 exceeds the risks related to those other applications.

6. The value of equity requires that perceived social or institutional value should not influence PPE allocation decisions.

A. Staff within the health system receive priority access on the grounds of risk minimization and impeding further viral transmission.

B. Within health system distribution, socioeconomic status, and position in the social or medical hierarchy should be irrelevant to allocation of PPE.

C. Harm minimization may permit prioritization of healthcare workers with critical expertise whose absence would disproportionally impact the health system's ability to provide adequate treatment to patients.

7. Allocation of PPE should be determined centrally across different healthcare institutions, such that institutions with greater patient exposure in terms of patient volumes and referral of at-risk patients (and thereby greater risk of their workers contracting COVID-19) receive greater allotments. Individual care teams or departments should not be competing to source PPE or left to distribute PPE without guidance.

A. This promotes harm minimization by more efficiently allocating PPE across the system.

B. This reflects the value of solidarity – we are, as a nation, all in this together, and healthcare institutions must be mutually supportive of one another.

C. There should be clear lines of communication between central coordinating bodies and front-line staff concerning distributional needs and prioritization, with the capacity to review and reallocate PPE quickly where necessary.

D. The same ethical principles and allocation policies should be used consistently across different levels of distribution (**macro**-, **meso**- and **micro**- allocation).

8. In addition to allocating scarce PPE, the value of good stewardship demands that PPE supply be appropriately managed. Minimizing non-essential PPE uses in order to free up supply may include:

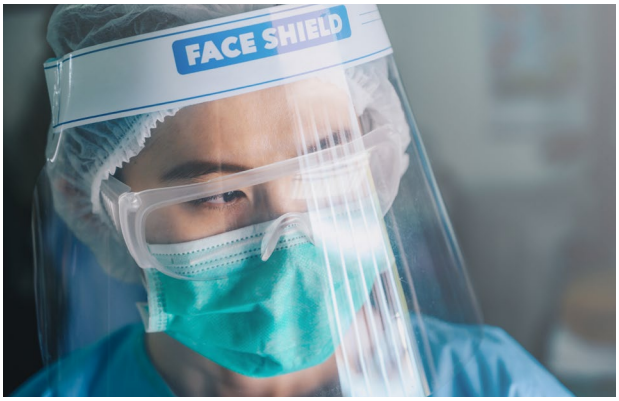
   A. Promoting and facilitating telemedicine.

   B. Limiting visitors (policy must be flexible, as the value of visitation for some patients such as those at end of life, or dependent on carers, may justify scarce PPE use).

   C. Postponing non-urgent procedures needing PPE (first cancelling elective procedures; if shortages persist, could also consider cancelling non-elective but non-urgent procedures).

   D. Delaying non-COVID-19 research studies requiring PPE.

   E. Provide appropriate training in infection prevention and control (IPC) in conjunction with PPE.



In the event of acute shortage, what is an ethical response by a healthcare worker to a request to perform a medically necessary procedure on a COVID-19 patient without fully adequate PPE?

1. The Singapore Medical Council's (SMC) Handbook of Medical Ethics states: "You have the right to ensure that you have adequate personal protection to minimise any infection risk before you treat such infectious patients. You are not obliged to put yourself at risk through inadequate protection measures. In situations where you cannot be assured of adequate protection and you assess that you are at an unacceptable infection risk, you should inform the patients and either defer treatment to another time when you have the necessary protective equipment, or else arrange for the transfer of their care to another facility where doctors have the requisite protection. Clearly if it is an emergency or urgent situation, such transfer of care should be expeditious to ensure timely treatment."

2. While the SMC's guidance was directed at physicians, its sentiment applies similarly to other healthcare staff such as nurses or pharmacists, though its application may differ depending on the risk of exposure.

3. Providing treatment with inadequate PPE is itself a source of risk. A healthcare provider who is exposed due to inadequate PPE to COVID-19, or other pathogens, may expose subsequent patients to infection. Widespread care without adequate PPE in a hospital setting may lead to a new cluster of infection within the hospital, putting more at risk than would be the case by declining care.

4. If the health system does not fulfill obligations of solidarity to protect staff with adequate PPE, healthcare staff's ethical obligations to work in such environments may be weaker.

5. Staff working within the health systems have an ethical obligation based in harm minimization to voice concerns about inadequate PPE, and managers must ensure clear and safe communication channels are available. Staff should not be censured or subject to reprimand or disciplinary measures for raising concerns about PPE supply.

6. In order to minimize harm, staff at elevated risk from COVID-19 due to age, co-morbidities or other factors may be given especial leeway to transfer care to staff at lower risk where there is insufficient PPE.

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