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Covid-19 in India: Oxygen shortages and a real world trolley problem

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An intensivist looking after six oxygen dependent patients has an adequate oxygen supply for only six hours but expects a refill after 12 hours, by which time none of the patients would be alive. If the intensivist stops administering oxygen to three patients, the other three would survive until the refill. What should the intensivist do? This impossible scenario isn't a thought experiment, but an unimaginable real world scenario that some Indian physicians faced during the second wave of covid-19. Several hospitals and cities, most prominently in the National Capital Region, faced severe shortages of medical oxygen as demand far outstripped supply. The public resorted to desperate requests on social media platforms. Hospitals even took recourse to legal moves, such as seeking judicial orders against the supplying agencies and the government to replenish their depleting oxygen supply.[1] In a few distressing incidents, patients died as hospitals ran out of oxygen.

Philosophers have struggled with the moral, ethical, and psychological concerns of the so-called trolley problem in thought experiments. The classic version imagines a trolley hurtling down the track towards five people trapped and unable to move, and a neutral observer in the railway yard with a lever. Pulling the lever switches the trolley to a different track, with one innocent bystander in its way. There are many variants of this thought experiment, with differing levels of moral complicity in the act of pulling the lever or its equivalent. One criticism of the trolley problem and its variants is that these are too extreme and unreal to be useful in real life. Another aspect is that a dispassionate intellectual armchair position cannot match a real world imperative.

Social behaviour is determined by moral judgments. Earlier work in moral psychology and the ethics of trolley problems adopted two paradigms—the intuitive emotional judgments that dominate in personal situations and the cognitive, often utilitarian judgments that dominate in impersonal situations. Virtual reality experiments that aimed to validate these frameworks have relied on measures such as self-reports of the range and strength of the emotions that participants experience (distress, helplessness etc). We need an ethical and moral framework to guide stressed doctors and administrators in this kind of an unprecedented situation as part of pandemic preparedness. Any decisions have far reaching personal, social, and legal consequences for the patient's family, the treating physician, and hospital administrators, who bear the brunt of a situation beyond their control. It would be instructive to scrutinise the "on the ground" response of doctors in India to the oxygen crisis. How did emotions affect their moral judgment? It is not obvious if (and how) oxygen was triaged. Assigning an arbitrary "value" to one individual rather than another is fundamentally unethical and untenable. Most hospitals instead passed the burden to patients and their relatives, who were asked to arrange a bed in a different hospital (an impossible task during the peak) or arrange for oxygen cylinders themselves. Some hospitals also started taking a statement at the time of admission, indemnifying them from liability if the patient died as a result of an oxygen shortage.[2]

In resource constrained settings, the universally accepted act of triage in mass civilian catastrophes involves denying immediate care to all who deserve it and instead focusing on those who need it the most. However, the act of not just deferring care, but of actively withdrawing existing care, is more morally abhorrent to many. Oxygen triage is an unfortunate zero sum game, and views on it will understandably differ, making prospective deliberations and consensus building all the more important.

The intensivist's individual decision making process would be affected by a complex interplay of non-medical biases, including self-beliefs, moral attitudes, religion, faith, sex, education, empowerment, choice, the immediacy and context of the situation, and social hierarchies. Their responses may change with the experience and emotional impact from each earlier decision.[3] Truog et al proposed a mechanism for triaging ventilator allocation by an independent triage committee, based on the patients' clinical parameters and mortality risk, thus lifting the moral burden from treating physicians.[4] They also suggested keeping the treating physician out of the loop while advising the patient and their relatives of the decision and following it through.

The medicolegal aspect remains murky. We do not have a legal framework for informed consent and shared decision making in such a scenario. Which legal representative would "consent" to active withdrawal of oxygen from their loved ones? Are we, as physicians, willing and prepared to have an honest conversation with patients when the need arises? Furthermore, given that the principle of "primum non nocere" (First do no harm) is ingrained in the very ethos of medical practice, would we be consumed with guilt if we participated in such an act?

We do not claim to know the answers. But low and middle income countries with poor health infrastructure and very low vaccination levels potentially face a similar crisis owing to omicron, or another covid-19 variant of concern. One hopes that the political economies of most such countries are prepared by now to prevent any further oxygen shortages, and this is where energies should be focused, to prevent a situation like this occurring again. We all need to acknowledge and face this

dilemma, and develop locally appropriate frameworks to guide doctors, patients, and administrators to the best solution in the future.

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