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Applying the ethical principles of resource allocation to drugs in limited supply during a public health crisis



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Drug shortages occur for many reasons, including production delays, material shortages, surging demand, and hoarding. During shortages, health care systems must determine how to fairly distribute these scarce resources to patients.

Unfortunately, no single distribution framework applies to all shortages. However, general allocation principles for scarce health care resources, grounded in distributive justice and utility, can be applied, although particular rules will differ depending on the circumstances. For example, chloroquine and hydroxychloroquine, familiar drugs to dermatologists commonly used against malaria and autoimmune diseases, have shown promise against COVID-19 in clinical trials.¹ Consequently, demand for these drugs has surged, portending critical shortages for all indications, including dermatologic diseases.² How should dermatologists prescribe these drugs during the pandemic?

A recent, timely article outlines recommendations for ethical health care resource allocation during a pandemic (Table I).³ During a pandemic, priority should be given to those whose survival would benefit most from treatment to maximize benefit to society. Applying this principle to antimalarials, patients with severe COVID-19, as well as patients with malaria or severe rheumatologic disease, for whom other effective treatments are unavailable, should be favored. If dermatology patients eligible for antimalarials have other, comparably effective treatment options, dermatologists should recommend alternatives, particularly for mild-to-moderate disease. Finally, providers should not prescribe these drugs to the “worried

well,” who may be hoarding medication in case of illness.

Clinicians must reassess allocation strategies as new data emerge. The efficacy of antimalarials for COVID-19 should be assessed via randomized clinical trials, which are ongoing. For example, a small open-label French study demonstrated a reduction in viral load but did not assess mortality or morbidity.¹ In contrast, for patients with systemic lupus erythematosus, a randomized controlled trial showed that discontinuing hydroxychloroquine leads to a 2.5-times increased relative risk of clinically relevant flares and a 6-times increased relative risk of severe exacerbation compared with controls.⁴ While the benefit of antimalarials to patients with COVID-19 remains uncertain, high-quality evidence supports continuing treatment in patients with severe systemic lupus erythematosus.

What is the role of patient autonomy in public health emergencies? Under normal circumstances, if a reasonable patient prefers antimalarials for skin disease, and the treatment is indicated, then the drugs should be prescribed. However, patient autonomy is diminished in public health emergencies as health care ethics shifts priority to populations over individuals.⁵

Currently, many states in the United States have limited prescribing of hydroxychloroquine, but these limitations generally do not apply to patients receiving the drug for approved indications.⁶ In applying the ethical principles of resource allocation (Table I), we argue that dermatologists should continue to prescribe antimalarials to patients with severe skin disease, but only in the minimum reasonable allotment in accordance with state

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Table I. Application of ethical principles of resource allocation in the COVID-19 pandemic*

| Ethical principle | Application to COVID-19 |
|---------------------------------|--|
| Maximize benefits | Saving the most lives/life-years is the highest priority. |
| Treat people equally | Random selection can be used for selecting among patients with comparable prognoses. |
| Promote and reward social value | Health care workers should be prioritized. With other factors equal, give priority to COVID-19 research participants. |
| Give priority to worst off | Give priority to sickest and youngest of population if it aligns with maximizing benefits (eg, saving most years of life or preventing further spread of virus). |

*Adapted from Emanuel et al.³

prescribing regulations during the pandemic, rather than higher volumes.

If new data demonstrate efficacy and safety of antimalarials against COVID-19, antimalarials should be generally reallocated to patients with COVID-19, with the exception of a select few patients with very severe dermatologic disease, until supplies meet demand. Furthermore, allocation should prioritize front-line health care workers because of their instrumental value to society.

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