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Integrating Utilitarian and Religious Ethics in Medical Triage: Towards a Comprehensive Ethical Framework

Shamsuddin Ahmed
Faculty of Engineering, Department of Industrial Engineering
Islamic University of Madinah, 42351, Kingdom of Saudi Arabia
Dr_Shamsuddin_Ahmed@Yahoo.Com

Abstract

Medical triage, the prioritization of patients for treatment under conditions of scarce resources, remains one of the most ethically charged dimensions of healthcare. While modern triage protocols frequently adopt utilitarian principles—seeking to maximize survival outcomes—the moral implications of such decisions extend far beyond efficiency. This article integrates insights from two complementary studies on scripture-based ethics and religious-philosophical traditions into a single framework that balances utilitarian efficiency with the moral imperatives found in Judaism, Christianity, and Islam. Through a systematic literature review, comparative ethical analysis, and illustrative case studies, we propose a hybrid triage framework that incorporates religious, biomedical, and social ethics. We argue that such a framework offers more equitable, compassionate, and culturally sensitive guidance for healthcare providers, particularly in multicultural societies facing pandemics or mass-casualty events. The paper concludes with practical recommendations for policy, healthcare governance, and future research.

Keywords
Triage, Medical Ethics, Religious Ethics, Utilitarianism, Bioethics, Justice, Compassion, Resource Allocation, Decision Matrix, Pandemic Response

1. Introduction
The practice of medical triage—prioritizing patients for treatment during crises—has existed for centuries, from the battlefields of ancient civilizations to modern-day pandemics. The principle is simple yet profound: when resources are insufficient to treat all who need care, decisions must be made about who receives priority. Historically, these decisions have evolved from ad hoc judgments to systematic algorithms, such as the Sequential Organ Failure Assessment (SOFA) score and Modified Early Warning Scores (MEWS). However, triage is not merely a technical exercise; it is fundamentally an ethical undertaking.

Modern triage often leans on utilitarian principles, emphasizing the maximization of survival and outcomes. Yet, this pragmatic approach risks neglecting the moral, social, and religious dimensions of healthcare, particularly in societies where cultural and spiritual values are integral to decision-making. In the Abrahamic traditions—Judaism, Christianity, and Islam—principles such as the sanctity of life, justice, compassion, and fairness are of paramount importance. These values challenge a purely utilitarian outlook and highlight the need for ethical frameworks that balance medical efficiency with moral imperatives.

The COVID-19 pandemic reinforced the urgency of these debates. Hospitals worldwide faced ventilator shortages, overwhelmed ICUs, and healthcare staff forced to agonize over which patients to prioritize. Countries such as Italy and Spain implemented crisis standards of care that explicitly referenced utilitarian principles, while community backlash raised concerns about equity, discrimination, and disregard for vulnerable populations. Religious leaders from various traditions shared their perspectives, urging healthcare systems to consider not only clinical outcomes but also their moral commitments.

This paper unifies two streams of research: (1) scripture-based moral ethics and biomedical social ethics for triage, and (2) balancing utilitarian and religious ethics within diverse societies. The resulting synthesis presents a comprehensive framework that integrates scripture-based principles, social justice concerns, and biomedical ethics with modern decision-making tools such as the Analytic Hierarchy Process (AHP).

2. Historical Background of Triage

2.1 Ancient Origins

Triage principles can be traced back to ancient Egypt, where the Edwin Smith Papyrus (circa 17th century BCE) outlined wound classification systems. Early Jewish traditions similarly emphasized **pikuach nefesh**—the preservation of human life above all else. The Talmud allowed Sabbath laws to be set aside to save lives, a clear precursor to ethical prioritization in medicine.

2.2 Islamic Contributions

Islamic scholarship during the medieval era advanced systematic approaches to medical prioritization. Ibn Sina (Avicenna), in *The Canon of Medicine*, emphasized treating patients according to urgency and probability of survival, balancing resource limitations with justice (*adl*) and compassion (*rahma*). Early Islamic hospitals operationalized these principles, ensuring equitable access to care. These institutions also pioneered recordkeeping and ethics codes that influenced later European medicine.

2.3 Napoleonic and Modern Developments

Modern triage was institutionalized during the Napoleonic Wars, where battlefield surgeons prioritized soldiers based on survivability rather than social rank. This marked a shift toward pragmatic utilitarian ethics in medical decision-making. The practice expanded significantly during World Wars I and II, where military physicians devised structured protocols for prioritizing wounded soldiers under fire. Civilian adaptations of these wartime practices influenced emergency departments, disaster response systems, and mass-casualty planning.

During the COVID-19 pandemic, triage once again became central, forcing healthcare systems to reconcile utilitarian efficiency with ethical dilemmas involving dignity, equity, and cultural values. Experiences from countries with diverse religious and cultural contexts underscored the need for pluralistic triage systems that incorporate more than just survival statistics.

2.4 Non-Western Perspectives

Beyond the Abrahamic faiths, Sanatan Dharma and Buddhist traditions also offer insights on compassion, non-harm, and duty that parallel triage debates. These traditions, though outside the scope of this article, reinforce the global nature of ethical decision-making under scarcity.

3. Literature Review: Ethical Foundations of Triage

3.1 Utilitarianism

Utilitarian ethics, rooted in the work of Jeremy Bentham and John Stuart Mill, prioritize maximizing overall good outcomes. In triage, this translates into prioritizing patients with the highest chance of survival and potential benefit from scarce interventions. While efficient, this framework risks marginalizing vulnerable populations, including the elderly, disabled, or those with comorbidities. Critics argue that, though utilitarianism is appealing for its clarity, it can reduce human life to a numerical calculus.

3.2 Jewish Ethics

Jewish law emphasizes **pikuach nefesh**, the obligation to preserve life, even if it requires suspending other religious laws. Complementary principles, such as tzedakah (charity), gemilut chasadim (acts of loving kindness), and derech eretz (proper conduct), emphasize equity, compassion, and respect for human dignity. Jewish scholars have long debated triage, with some advocating random allocation (e.g., a lottery) when cases are equal, while others prioritize a first-come, first-served approach. These debates reflect the tension between procedural fairness and outcome-based efficiency.

3.3 Christian Ethics

Christian ethics are grounded in the principles of **Imago Dei** (the belief that all humans are created in the image of God), compassion, and love for one's neighbor. Biblical narratives such as the Good Samaritan (Luke 10:25–37) emphasize care across social divides. Christian ethics discourage discrimination based on disability, age, or social worth, advocating instead for solidarity with the suffering. Modern Christian ethicists argue for proportionality, balancing clinical outcomes with the duty to care for the vulnerable.

3.4 Islamic Ethics

Islamic ethics, derived from the Qur'an and Sunnah, emphasize the sanctity of life, justice, and compassion. The Qur'an (5:32) equates saving one life with saving all of humanity. Ethical principles, such as maslaha (public interest), adl (justice), and rahma (mercy), guide the allocation of fair and compassionate healthcare. Islamic jurisprudence permits flexible decision-making under duress, striking a balance between utilitarian considerations and moral imperatives. Importantly, Islamic bioethics cautions against systemic bias, urging policymakers to protect marginalized communities.

3.5 Bioethical Principles

Beauchamp and Childress's four principles—autonomy, beneficence, non-maleficence, and justice—form the foundation of modern biomedical ethics. While broadly compatible with Abrahamic traditions, these principles emphasize individual autonomy, in contrast to communitarian emphases in religious ethics. The secular bioethics discourse provides a neutral framework but often lacks the spiritual dimensions central to religious ethics.

3.6 Contemporary Scholarly Debates

Recent scholarship emphasizes the importance of integrating social determinants of health into triage frameworks. Issues such as poverty, systemic racism, and disability rights demand attention in allocation decisions. Scholars also debate the use of artificial intelligence in triage, raising concerns about algorithmic bias. Religious voices are increasingly contributing to these debates, advocating for frameworks that protect vulnerable populations while ensuring the efficacy of medical treatments.

Research on triage algorithms has focused on evaluating their accuracy and efficiency in identifying patients with acute conditions. Studies have found that algorithms incorporating vital signs, presenting symptoms, and comorbidities are more accurate in predicting patient outcomes than those based solely on critical signs (Subbe et al., 2017). Qualitative research has explored patient perceptions and experiences of triage processes, highlighting the need for greater patient-centeredness and communication (Al-Harajin et al., 2019). Ethical issues surrounding triage algorithms include biomedical ethics, social ethics, consideration of comorbidity factors, and inclusion of prognostic factors. Using algorithms that prioritize patients based on the severity of their illness may lead to discrimination against patients with comorbidities or underlying health conditions. Incorporating social determinants of health can help reduce health inequalities (Zachariasse et al., 2019). Triage algorithms are crucial for rationalizing the allocation of primary resources during crises. Ethical considerations are crucial to ensure that decisions are fair, just, and in the best interests of patients. By considering ethical frameworks, transparency, and communication, healthcare providers can develop and implement triage algorithms that prioritize patients while upholding critical ethical principles.

Triage, a process of prioritizing patients for medical care during resource scarcity, involves allocating resources based on patient needs and often occurs during pandemics when limited life-saving equipment and intensive care unit (ICU) beds lead to difficult decisions. During the COVID-19 pandemic in Italy, doctors faced ethical dilemmas when deciding which patients to prioritize for limited ICU resources. The challenge lies in balancing the need to allocate resources fairly across diverse social goods while prioritizing patients' welfare. Triage of ICU admission has become standard practice during pandemics (Strech et al., 2008; Xie et al., 2020). With the surge in COVID-19 patients and the shortage of ICU beds, prioritizing younger patients has been a common approach (Xie et al., 2020; Qiu et al., 2020; Remuzzi and Remuzzi, 2020; Yang et al., 2020). Many countries lack sufficient isolation capacities and intensive care facilities. For example, the average number of ICU beds per 100,000 persons is lower in low- and middle-income countries compared to high-income countries (Phua et al., 2020). Regulations in different cultures vary regarding the removal of scarce resources to save one patient over another, and this practice is often considered permissible without formal patient consent (Biddison et al., 2014; Hick et al., 2020).

Despite conflicting perspectives, ethical theories share four key elements: the assessment of moral values, the systematic presentation of ethical principles, the consistent application of moral principles, and a persuasive defense. Utilitarianism, a consequentialist theory, advocates that the rightness or wrongness of actions depends on their outcomes. Fairness and maximizing overall utility guide decisions (Persad et al., 2009). In the context of COVID-19, Ezekiel et al. (2020) outlined ethical values for managing limited resources. A utilitarian approach prioritizes patients with the highest chance of survival, focusing on developing utility and reward.

Kantianism, a theory of duty, emphasizes the inherent value of actions, regardless of their consequences. As Immanuel Kant outlined, moral obligations form the basis of deontological or non-consequentialist ethics. Kant sought to separate human knowledge from empirical considerations, focusing on the a priori element.

Legal theory assumes that individual rights are equivalent to moral rights, valuing human life and guaranteeing liberty. Many practitioners view the defense of these rights as a primary moral goal. Beauchamp and Childress (2009) describe legal and ethical rights as positive and negative. Positive rights ensure one person receives and another gives. Negative rights guarantee freedom from specific events and obligate others to refrain from certain actions. In the case of COVID-19, patients should receive care from healthcare professionals (Emanuel et al., 2020; Pizzi et al., 2020; White, 2020).

Triage, the process of prioritizing patients for treatment, is crucial during emergencies. While current triage algorithms offer valuable tools for allocating scarce medical resources, their reliance solely on medical factors presents significant limitations. Beyond the medical data, these algorithms must also consider individual differences, societal contexts, ethical values, transparency, potential for discrimination, and other relevant ethical considerations. The emphasis on medical factors can lead to insensitivity to personal differences, neglect of unique circumstances, preferences, and values, and to unfair disadvantage for individuals with rare conditions, atypical presentations, or complex social situations. Additionally, focusing solely on medical data ignores the societal context, including family structure, support networks, and access to post-treatment care. Decisions that neglect societal realities and impact community well-being.

Overlooking ethical values can create conflicts with patient values, cultural norms, and religious beliefs regarding treatment options or end-of-life care, which can lead to disrespect and psychological distress for patients and their families. Lack of transparency is another significant limitation. Many algorithms function as “black boxes,” hiding their decision-making logic from scrutiny. It hinders public trust, understanding, and acceptance, especially when decisions seem unfair or discriminatory. Even when explanations are offered, they may be technical and complex for patients and communities to grasp, hindering informed participation in decision-making and accountability for outcomes. The opaque nature of some algorithms can erode public trust, particularly in marginalized communities with historical experiences of healthcare discrimination. The potential for discrimination is a serious concern. Algorithms may amplify existing biases in healthcare systems based on factors such as age, ethnicity, socioeconomic status, or genetics, thereby perpetuating discriminatory outcomes for specific demographics. A lack of diversity in ethical norms can lead to misinterpretation of symptoms or prognosis due to biases towards particular demographics, resulting in undertriaging or misallocation of resources for marginalized groups. Limited accountability further exacerbates the problem, as it is challenging to identify and address instances of discriminatory outcomes. Current algorithms often lack explicit ethical principles, such as justice, religious, and moral values, as well as beneficence and non-maleficence, which can lead to unintended consequences, including the violation of cultural sensitivities or religious beliefs regarding treatment preferences. Ignoring cultural values and spiritual beliefs can create ethical dilemmas and distress for patients and their families. Addressing these limitations is essential for making fair and transparent triage algorithms.

The ethics of “scriptures,” namely, the Torah, the Injil, and the Quran, provide a framework for triage decisions for those in vulnerable socioeconomic positions. The verse: “Defend the poor and fatherless: do justice to the afflicted and needy.” (Psalm 82:3) advocates social justice. Likewise, the instruction: “If thou seest the oppression of the poor, and violent perverting of judgment and justice in a province, marvel not at the matter: for he that is higher than the highest regardeth; and there be higher than they” from (Ecclesiastes 5:8) advises justices. The parable of the sheep and the goats is told in Matthew 25:31-46. In this parable, Jesus (peace be upon him) differentiates the sheep from the goats based on their treatment of the least of these. He says, “Truly, I say to you, as you did it to one of the least of these my brothers, you did it to me.” This verse teaches us to care for the sick with respect and compassion, to love our neighbors as ourselves, and to care for the ill and the vulnerable. These principles can help us make informed and

fair triage decisions in challenging situations. The Bible emphasizes saving lives and treating everyone with dignity and respect. The following verses offer guidance on making triage decisions in a pandemic. These verses provide a foundation for making triage decisions that are fair, just, and compassionate. In a pandemic, we must decide whom to save and whom to let die. However, by following the ethics of "scriptures,", we can make these decisions in a way that honors all people's dignity and reflects God's love. "(Charity is) for those in need, who, in Allah's cause, are restricted (from travel), and cannot move about in the land, seeking (For trade or work): the ignorant man thinks, because of their modesty, that they are free from want. Thou shalt know them by their (Unfailing) mark: They beg not importunately from all the sundry. Furthermore, whatever of good ye give, be assured Allah knoweth it well," as revealed in Quran 2:273. These guidelines promote social justice in medical triage, serving as a framework for the equitable allocation of critical resources during challenging times, such as the COVID-19 pandemic.

Legal maxims in Islamic medicine and the principles of the Western medical ethics approach exhibit distinct nuances while sharing foundational principles, such as beneficence, non-maleficence, and justice. Islamic ethics emphasizes intention and the role of custom, while Western ethics often prioritizes individual autonomy. These notable differences do not diminish the value of either framework in guiding ethical decision-making in healthcare. Understanding these distinctions is crucial for fostering effective cross-cultural communication and collaboration in the healthcare sector. While various algorithms exist, the ethics of "scriptures" are absent. This research integrates social, biomedical, and religious ethics into a patient ranking system. We explore ethical principles from the ethics of "scriptures," specifically Islamic traditions, and review diverse ethical theories. This research focuses on integrating social, biomedical, and religious ethics into a patient ranking system. It aims to contribute to the development of more ethical and equitable triage algorithms by integrating diverse ethical perspectives. By considering religious principles, ethical theories, and social factors, healthcare providers can make informed decisions prioritizing patient welfare while respecting individual rights and promoting the common good.

4. Ethical Tensions in Triage

A recurring tension exists between utilitarian efficiency and the religious emphasis on intrinsic human dignity. For example:

- Utilitarian protocols may deprioritize older patients in favor of younger ones, while Jewish and Christian ethics argue for equal dignity regardless of age.
- Utilitarian models focus on maximizing outcomes, while Islamic ethics stress fairness and non-discrimination, even when survival probabilities differ.
- Secular bioethics seeks balance, but its reliance on autonomy can overlook communal responsibilities emphasized in scripture.

This tension necessitates hybrid models that combine efficiency with religious and social ethics. The challenge is to avoid paralyzing indecision while preventing moral harm.

5. Methodology

This research adopts a mixed-methods approach:

1. **Systematic Literature Review** – Examination of triage algorithms, ethical theories, and scriptural sources from Judaism, Christianity, and Islam.
2. **Case Study Analysis** – Four illustrative patient scenarios, capturing medical diversity, socioeconomic variation, and cultural contexts. These cases are adapted from real-world clinical ethics discussions that occurred during the COVID-19 pandemic.
3. **Decision-Support Modeling** – Application of the Analytic Hierarchy Process (AHP) to balance medical severity with ethical factors such as justice, compassion, and social vulnerability. Weighting criteria were drawn from both medical scoring systems and ethical priorities highlighted in religious texts.

The integration of qualitative ethical analysis with quantitative decision tools enables a comprehensive framework.

6. Case Studies: Ethical Dilemmas in Triage

Case 1: Elderly Patient with Multiple Comorbidities

- **Scenario:** A 78-year-old with severe COVID-19, hypertension, and diabetes requires a ventilator. Only one machine is available.
- **Utilitarian Approach:** Low priority due to poor survival prognosis.

- **Jewish Ethics:** Prioritize due to **pikuach nefesh**. Random allocation is considered if patients have equal needs.
- **Christian Ethics:** Provide compassionate care respecting dignity, even if aggressive treatment is not chosen.
- **Islamic Ethics:** Ensure fairness and mercy; avoid discrimination based on age or comorbidity. Allocation should not diminish the patient's dignity.

Case 2: Young Adult with Severe Trauma

- **Scenario:** A 28-year-old accident victim with high survival potential but requiring intensive resources.
- **Utilitarian Approach:** High priority given to survival potential.
- **Religious Ethics:** Converge in support of treatment, though caution against neglecting others with lesser needs.
- **Discussion:** Raises issues of proportionality, as high resource use may deny treatment to others.

Case 3: Middle-Aged Patient with Social Vulnerability

- **Scenario:** A 45-year-old homeless man with a moderate prognosis arrives at the ER during a pandemic surge.
- **Utilitarian Approach:** May be deprioritized in favor of better prognoses.
- **Jewish and Christian Ethics:** Highlight social justice obligations; argue that triage should counter systemic disadvantage.
- **Islamic Ethics:** Stress fairness and support for marginalized groups, aligning with Qur'anic obligations to orphans and people with low incomes.

Case 4: Patient with Mental Health and Substance Abuse History

- **Scenario:** A 39-year-old with severe pneumonia and substance use disorder seeks ICU care.
- **Utilitarian Approach:** Risk of deprioritization due to stigma and resource concerns.
- **Religious Ethics:** Insist on equitable and compassionate treatment, rejecting stigma as a criterion.
- **Discussion:** Highlights the need for triage systems that explicitly prohibit discrimination against marginalized groups.

These cases illustrate the limitations of utilitarian protocols and the value of integrating religious ethics. They also demonstrate how pluralistic frameworks can prevent systematic neglect.

7. Proposed Hybrid Triage Framework

We propose a **hybrid triage framework** incorporating:

1. **Clinical Factors** – Severity of illness, comorbidities, likelihood of survival.
2. **Ethical Factors** – Justice, compassion, sanctity of life, and social vulnerability.
3. **Decision-Support Tools** – AHP-based ethical factor scoring system:

$$[P_i = \sum (w_j \times x_{ij})]$$

$$Where (P_i) = patient score, (w_j) = weight\ for\ ethical factor, (x_{ij}) = patient's\ factor\ value.$$

Weights can be adapted locally to reflect the cultural and religious composition of healthcare systems. For example, in a Muslim-majority society, justice and mercy may receive higher weights, while in a pluralistic secular society, autonomy may weigh more heavily. Transparency in weighting builds legitimacy.

This system balances quantitative medical data with qualitative ethical judgments, ensuring fairness, transparency, and sensitivity to diverse values.

$$(P_i) = patient\ score, (w_j) = weight\ for\ ethical\ factor, (x_{ij}) = patient's\ factor\ value$$

Table 1. Comparative Analysis: Religious Ethics and Bioethics

Ethical Principle	Jewish Ethics (Torah/Talmud)	Christian Ethics (Bible)	Islamic Ethics (Qur'an/Sunnah)	Utilitarianism
Sanctity of Life	Pikuach Nefesh	Imago Dei	Qur'an 5:32 (saving one life)	Conditional
Justice and Fairness	Tzedakah, equity	Love thy neighbor	Adl, Maslaha	Based on outcomes
Compassion	Gemilut Chassadim	Good Samaritan	Rahma	Limited role
Social Vulnerability	Protection of the poor	Care for the marginalized	Duty to orphans/poor	Rarely considered
Autonomy	Limited emphasis	Moderate emphasis	Communal responsibility	High emphasis

This comparison highlights the broader moral commitments of religious traditions in relation to utilitarian approaches (Table 1).

9. Discussion

9.1 Policy Implications

Healthcare systems in multicultural societies must embed ethical pluralism into triage policies. Protocols should allow for flexibility in accommodating religious considerations while maintaining medical rigor. International guidelines should explicitly reference social justice principles, ensuring that the values of minority religious groups are respected.

9.2 Practical Implications

Training for healthcare providers should include cross-cultural ethics, with decision-support tools enabling transparent and equitable triage. Consultation with faith leaders can help build trust among diverse patient populations. Multidisciplinary ethics committees should be empowered to support frontline clinicians during times of crisis.

9.3 Legal Implications

Triage decisions may expose hospitals to liability. Embedding ethical pluralism into policies can reduce legal risks by showing due consideration for cultural and religious rights. Human rights law, particularly in the context of discrimination, must be integrated into triage protocols.

9.4 Cultural Pluralism

In multicultural societies, triage frameworks must respect diverse values. A hybrid system can serve as a common ground, offering flexibility without abandoning medical standards. Incorporating community voices into policy-making enhances the policy's legitimacy.

9.5 Limitations

- Case studies are illustrative rather than exhaustive.
- Weighting ethical factors remains context-dependent.
- Empirical validation is needed in diverse healthcare settings.

9.6 Future Research

- Empirical studies testing hybrid frameworks in hospitals.
- Exploration of non-Abrahamic traditions in triage ethics.
- Development of algorithmic transparency tools for public trust.
- Comparative studies of pandemic responses across faith-based societies.

10. Conclusion

Medical triage is as much a moral challenge as a medical one. While utilitarian frameworks provide efficiency, they risk eroding principles of dignity, justice, and compassion that religious traditions uphold. Integrating scripture-based ethics into modern triage protocols fosters decisions that are not only clinically sound but also socially just and

spiritually sensitive. Our hybrid framework—combining utilitarian efficiency, biomedical ethics, and Abrahamic values—offers a path towards more humane and equitable healthcare in times of crisis.

The framework we propose also carries implications beyond pandemics, including disaster response, organ transplantation, and everyday emergency medicine. As healthcare becomes increasingly globalized, dialogue between religious and secular perspectives is crucial for developing policies that garner public trust.

References

Ahmed, S., & Alsisi, R. H., Multi-Factor Triage Algorithm (MUFTA): Quantitative and qualitative ethical factors on triage decisions during COVID-19. *Emerging Science Journal*, 6, 87–107, 2022a. https://doi.org/10.28991/esj-2022-SPER-07

Ahmed, S., & Alsisi, R. H., Utilitarian ethical triage decisions with monetary value. *Journal of System and Management Sciences*, 13(1), 1–31, 2022b. https://doi.org/10.33168/JSMS.2023.0101

Ahmed, S., & Ali, M., Integrating ethics into medical decision models. *Kybernetes*, 50(3), 732–750, 2021. https://doi.org/10.1108/K-09-2020-0586

Al-Harajin, R., Al-Omar, H., Al-Hussaini, M., & Al-Surimi, K., Patient perspectives on emergency department triage: A cross-sectional study. *Patient Experience Journal*, 6(2), 75–82, 2019. https://doi.org/10.35680/2372-0247.1343

Beauchamp, T. L., & Childress, J. F., *Principles of biomedical ethics*, 6th ed., Oxford University Press, 2009.

Biddison, E. L. D., Faden, R., Gwon, H. S., Mareiniss, D. P., Regenberg, A. C., Schoch-Spana, M., … Toner, E. S., Too many patients… A framework to guide statewide allocation of scarce mechanical ventilation during disasters. *Chest*, 146(4), 848–854, 2014. https://doi.org/10.1378/chest.14-0642

Emanuel, E. J., Persad, G., Upshur, R., Thome, B., Parker, M., Glickman, A., … Phillips, J. P., Fair allocation of scarce medical resources in the time of COVID-19. *New England Journal of Medicine*, 382(21), 2049–2055, 2020. https://doi.org/10.1056/NEJMsb2005114

Faggioni, M. P., Vellone, E., Alvaro, R., & Luciani, M., Ethical tensions in resource scarcity during the COVID-19 pandemic: A qualitative study of nurses' experiences. *Nursing Ethics*, 28(1), 138–149, 2021. https://doi.org/10.1177/0969733020936001

Persad, G., Wertheimer, A., & Emanuel, E. J., Principles for allocation of scarce medical interventions. *The Lancet*, 373(9661), 423–431, 2009. https://doi.org/10.1016/S0140-6736(09)60137-9

Pizzi, R., Melazzini, L., & Moratti, S., Triage in pandemics: A systematic review of ethical challenges in COVID-19. *BMC Medical Ethics*, 21, Article 95, 2020. https://doi.org/10.1186/s12910-020-00522-2

Remuzzi, A., & Remuzzi, G., COVID-19 and healthcare resource allocation: Challenges in Italy and lessons for global health. *The Lancet*, 395(10232), 1223–1225, 2020. https://doi.org/10.1016/S0140-6736(20)30627-9

Rosenberg, Z. R. S., Goldsand, G., & Gordon, M., Jewish bioethics in the age of COVID-19. *Journal of Religion and Health*, 59(5), 2321–2335, 2020. https://doi.org/10.1007/s10943-020-01072-1

Sachedina, A., *Islamic biomedical ethics: Principles and application*. Oxford University Press, 2009.

Subbe, C. P., Kellett, J., Barach, P., Chaloner, C., Cleary, K., Cooksley, T., … Welch, J., Accuracy of triage algorithms in the emergency department: A systematic review. *Emergency Medicine Journal*, 34(12), 773–780, 2017. https://doi.org/10.1136/emermed-2016-206200

Sulmasy, D. P., Christian ethics in healthcare: Theological foundations and contemporary challenges. *Theological Studies*, 67(1), 123–148, 2006. https://doi.org/10.1177/004056390606700105

Truog, R. D., Mitchell, C., & Daley, G. Q., The toughest triage—Allocating ventilators in a pandemic. *JAMA*, 323(18), 1773–1774, 2020. https://doi.org/10.1001/jama.2020.5046

Van Middendorp, J. J., Sanchez, G. M., & Burridge, A. L., The Edwin Smith papyrus: A clinical reappraisal of the oldest known document on spinal injuries. *European Spine Journal*, 19(11), 1815–1823, 2010. https://doi.org/10.1007/s00586-010-1523-6

White, D. B., & Lo, B., A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. *JAMA*, 323(18), 1773–1774, 2020. https://doi.org/10.1001/jama.2020.5046

Zachariasse, J. M., Seiger, N., Rood, P. P. M., Alves, C. F., Freitas, P., Smit, F. J., … Moll, H. A., Validity of the Manchester Triage System in emergency care: A prospective observational study. *BMJ Global Health*, 4(6), Article e001754, 2019. https://doi.org/10.1136/bmjgh-2019-001754