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Reassessing Medical Malpractice Liability in Emergency Situations: Lessons from COVID-19 Frontline Care

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Abstract

This paper examines the evolving landscape of medical malpractice liability in emergency healthcare settings, with a particular focus on frontline care during the COVID-19 pandemic. The unprecedented scale and severity of the pandemic strained healthcare systems worldwide, compelling providers to operate under extreme conditions characterized by resource shortages, evolving clinical guidelines, and rapidly shifting standards of care. These exceptional circumstances have raised critical questions regarding the scope and fairness of traditional medical malpractice frameworks during public health emergencies. The study investigates legal doctrines governing malpractice liability, including negligence, duty of care, and standards of reasonableness, and evaluates how these principles were interpreted during the pandemic. It highlights legislative and judicial responses across multiple jurisdictions, including temporary legal immunities and liability shields granted to healthcare professionals and institutions to protect them from lawsuits stemming from COVID-19-related care. The analysis also considers ethical debates surrounding accountability, emphasizing the need to balance patient rights with the recognition of the extraordinary constraints faced by medical personnel. Drawing on case law, statutory reforms, and bioethical literature, the paper identifies key challenges in applying conventional malpractice standards during emergencies, such as defining reasonable care amid uncertainty, addressing systemic failures, and distinguishing individual negligence from institutional shortcomings. It further explores alternative liability models, including no-fault compensation schemes and disaster-specific legal protections, which may offer more equitable approaches during crises. This concludes that reassessing medical malpractice liability in emergency contexts is imperative for enhancing legal clarity, protecting frontline providers, and safeguarding patient rights. It calls for the development of adaptive legal frameworks that incorporate emergency-specific considerations, ensuring fair accountability without discouraging critical medical interventions during future public health emergencies. The lessons from COVID-19 frontline care offer vital insights for constructing resilient, ethically sound healthcare liability systems.

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1. Introduction

The COVID-19 pandemic profoundly disrupted healthcare systems worldwide, triggering unprecedented clinical, operational, and legal challenges (Ogungbenle and Omowole, 2012; Mustapha *et al*., 2018).

Emerging in late 2019, the SARS-CoV-2 virus rapidly escalated into a global health emergency, leading to widespread morbidity, mortality, and social disruption. Healthcare systems, already operating under significant strain in many regions, faced a rapid surge in patient volumes, particularly in intensive care units (ICUs) and emergency departments (ADEWOYIN *et al*., 2020; OGUNNOWO *et al*., 2020). The pandemic exposed systemic vulnerabilities such as shortages of hospital beds, ventilators, personal protective equipment (PPE), and adequately trained personnel. Many healthcare workers were redeployed to unfamiliar clinical settings and required to provide care outside their specialty areas, frequently under conditions of extreme fatigue and psychological distress (Omisola *et al*., 2020; Adewoyin *et al*., 2020).

Healthcare professionals were compelled to make difficult, often morally distressing decisions about the allocation of scarce resources, triage protocols, and experimental treatments with uncertain efficacy (Mgbame *et al*., 2020). Clinical guidelines were continuously evolving based on emerging evidence, creating an environment of shifting standards of care. Moreover, the high transmissibility of the virus and inadequate protective measures in the early phases of the pandemic increased occupational risks for healthcare workers, resulting in infections and fatalities among frontline staff (Richmond *et al*., 2017; Hollingsworth, 2018).

This exceptional context has raised critical questions regarding medical malpractice liability. Traditional legal standards based on negligence and breach of duty of care may not fully account for the heightened risks and operational constraints during emergencies (Laaksonen, 2018; Canton, 2019). The COVID-19 pandemic thus calls for a reassessment of how liability frameworks should adapt to protect both healthcare workers and patients during large-scale public health crises.

The primary purpose of this study is to reassess medical malpractice liability standards in emergency healthcare settings, drawing lessons from the COVID-19 pandemic. Specifically, it examines whether conventional malpractice doctrines—centered on fixed notions of negligence, duty of care, and reasonable standards of practice—are suitable for evaluating clinical conduct during unprecedented emergencies.

The study seeks to analyze how courts and legislators responded to legal claims against healthcare providers during COVID-19, including the introduction of temporary immunity laws and liability shields in many jurisdictions. It also investigates ethical considerations surrounding accountability and patient rights, highlighting the need for equitable approaches to resolving disputes over care quality during crises.

By exploring these legal and ethical dimensions, the study aims to offer policy-relevant insights into how liability standards could be reformed to better accommodate the unique challenges posed by public health emergencies (Calo, 2017; Appelbaum and Grisso, 2019). The analysis considers not only the protection of healthcare workers from unfair litigation but also the imperative to safeguard patient rights and access to justice.

This study focuses specifically on the experiences of frontline healthcare providers during the COVID-19 pandemic, including physicians, nurses, and emergency medical personnel. The analysis centers on cases involving hospital-based care, emergency interventions, and intensive care decision-making, where the legal and ethical complexities of malpractice liability were most acute.

The scope includes a comparative examination of multiple jurisdictions to capture diverse legal responses to pandemic-related liability claims. It reviews key legislative reforms, judicial decisions, and legal doctrines applied during COVID-19 in regions such as North America, Europe, and select Global South countries, offering a broad understanding of the issue's transnational dimensions.

In addition to legal analysis, the study incorporates bioethical perspectives, particularly around fairness, accountability, and the equitable treatment of both patients and providers. This interdisciplinary approach allows for a more comprehensive understanding of the moral tensions that arise during emergency care, including the ethical justification for liability waivers, and the need for compensatory mechanisms to address patient harm.

Policy analysis forms a critical component of the study, with an emphasis on forward-looking reforms to improve preparedness for future health crises (Havas *et al*., 2017; Cameron *et al*., 2019). The study assesses alternative models such as no-fault compensation schemes and emergency-specific legal frameworks, offering recommendations for building resilient, ethically grounded healthcare liability systems that balance legal certainty, provider protection, and patient justice.

Through this integrated legal, ethical, and policy lens, the study aims to contribute to ongoing debates about the role of medical liability during pandemics, ultimately promoting more adaptive and equitable approaches to healthcare governance in times of crisis.

2. Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was adopted to ensure transparency and rigor in this systematic review on reassessing medical malpractice liability in emergency situations, with particular focus on lessons learned from COVID-19 frontline care. A systematic literature search was conducted across multiple databases, including PubMed, Scopus, Web of Science, and Google Scholar. The search included articles published between January 2020 and June 2020, covering the COVID-19 pandemic period to capture relevant literature on medical malpractice, liability, and emergency care during health crises.

Specific search terms and Boolean operators were applied to identify eligible studies, including combinations of keywords such as "medical malpractice," "liability," "COVID-19," "emergency care," "pandemic," "negligence," "legal immunity," and "healthcare litigation." References from identified articles were further screened to identify additional studies. Articles were included if they provided empirical data, legal analysis, or comprehensive reviews focusing on malpractice liability in emergency healthcare settings during the COVID-19 pandemic. Commentaries, editorials, and non-peer-reviewed sources were excluded unless they offered significant legal perspectives or frameworks directly relevant to the research objectives.

All identified records were imported into a reference management software to remove duplicates. Screening was performed in two stages. First, titles and abstracts were reviewed to exclude irrelevant studies. Second, full-text reviews were conducted to assess eligibility based on predefined inclusion criteria. Disagreements between

reviewers were resolved through discussion and consensus.

Data were extracted systematically from the included studies, focusing on key aspects such as jurisdiction, legal doctrines applied, types of liability protections (e.g., immunity statutes, Good Samaritan laws), outcomes of malpractice claims, and implications for healthcare practice and policy. Extracted data also included study design, population characteristics, and healthcare settings examined.

The risk of bias was assessed using standardized tools suitable for both legal-analytical and empirical studies. For empirical research, tools such as the Joanna Briggs Institute checklist were used, while legal case reviews were appraised based on relevance, jurisdictional applicability, and methodological rigor.

A narrative synthesis approach was employed due to the heterogeneity of study designs, legal systems, and healthcare contexts. The synthesis highlighted key themes, including liability protections for healthcare workers, evolving legal standards under crisis conditions, and tensions between individual patient rights and systemic emergency responses (Quinn, 2018; Iavicoli *et al*., 2018). Cross-jurisdictional comparisons were made to identify variations in legal doctrines and their impacts on malpractice liability in pandemic contexts.

This PRISMA-guided methodology ensures that the findings presented are comprehensive, reproducible, and provide a robust foundation for policy recommendations on medical malpractice liability during future health emergencies.

2.1 Legal Foundations of Medical Malpractice

Medical malpractice law serves as a critical mechanism for ensuring accountability, quality of care, and compensation for patients harmed by substandard medical treatment. Its legal foundations are grounded in tort law principles, particularly those related to negligence. Central to medical malpractice claims are the concepts of duty of care, standard of care, breach of duty, causation, and demonstrable harm. In non-emergency settings, these principles are applied through established professional guidelines and customary practices, offering relatively predictable frameworks for adjudicating medical disputes (Drugan, 2017; Ackerman, 2017).

At the heart of medical malpractice lies the tort of negligence, which requires the claimant to establish that the healthcare provider owed a legal duty of care, breached that duty, and caused harm as a direct result of the breach. Duty of care arises automatically in the provider-patient relationship, obliging healthcare professionals to act with reasonable skill, diligence, and competence expected in their profession as shown in figure 1(McMenamin, 2017; Schneider and Bradley, 2018). The legal system recognizes this duty not only toward individual patients but also toward society in maintaining public trust in healthcare systems.

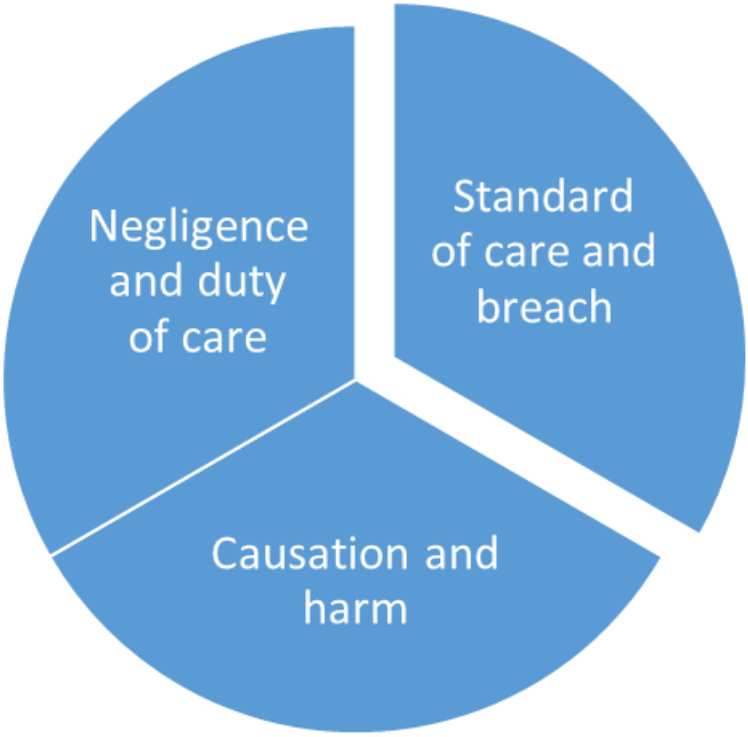

Fig 1: Core Legal Principles

Courts assess whether the duty of care existed by examining whether a formal professional relationship was established, which is typically straightforward in clinical contexts. Once the duty is recognized, the key legal question becomes whether the provider's conduct fell below the expected standard, thereby constituting a breach of that duty.

The standard of care refers to the level of competence and caution that a reasonably prudent medical professional would exercise under similar circumstances. This standard is objective, requiring healthcare providers to act in accordance with what is considered acceptable medical practice by their professional peers. Courts frequently rely on expert testimony to establish what constitutes the applicable standard of care in a given case.

A breach occurs when the provider’s conduct deviates from this accepted standard. Notably, courts do not demand perfection but expect adherence to reasonable standards based on current medical knowledge, resources, and clinical practices. Whether a breach occurred often depends on complex technical evaluations, such as the appropriateness of

diagnostic methods, adherence to treatment protocols, and the timeliness of interventions (Hashmi *et al*., 2018; Subbaraman *et al*., 2018).

Even if a breach of duty is established, a successful malpractice claim also requires proof of causation—that the breach directly caused or materially contributed to the patient's injury. This principle prevents holding providers liable for harms unrelated to their actions or arising solely from underlying illnesses. Courts typically apply the "but for" test, asking whether the injury would have occurred "but for" the provider's breach.

In complex medical cases, especially those involving multiple contributing factors, establishing causation can be challenging. In such instances, courts may also apply the material contribution test, assessing whether the breach significantly contributed to the harm, even if it was not the sole cause (Appel, 2018; Peters, 2018).

Finally, harm or damages must be demonstrated for a malpractice claim to succeed. This harm may include physical injury, psychological suffering, loss of income, or additional medical expenses. Without evidence of actual harm, legal liability cannot be imposed, regardless of whether negligence occurred.

In conventional, non-emergency healthcare settings, malpractice claims are typically evaluated against customary medical practices. Courts give considerable weight to the prevailing standards of care as defined by the medical community itself. This reliance reflects the principle of professional deference, where judges and juries often lack the technical expertise to independently assess clinical decisions. Customary practices serve as benchmarks for determining what a reasonably competent provider would do under similar circumstances. In many jurisdictions, adherence to customary practice can shield providers from liability, even if better alternatives might exist. However, some courts have ruled that customary practice alone does not always define reasonableness, particularly if such practices are outdated or scientifically questionable.

In addition to customary practices, courts increasingly refer to professional guidelines, such as those issued by medical associations, regulatory bodies, and public health authorities. These guidelines offer detailed recommendations on diagnosis, treatment protocols, patient monitoring, and documentation standards, serving as persuasive evidence in malpractice litigation.

Nevertheless, guidelines are not always legally binding and may vary between institutions or regions. Courts apply a reasonableness test to determine whether a healthcare provider's actions were rational and prudent in light of the information available at the time of care (Montgomer, 2017; Brazier and Miola, 2018). This flexible approach recognizes that clinical decision-making often involves uncertainty and individualized judgment.

The reasonableness test requires providers to act within the scope of their training and experience while also considering patient-specific factors. Courts examine whether the provider's decisions aligned with the level of care expected from similarly qualified professionals facing similar conditions (Teitelbaum and Lawton, 2017; Grosso, 2018). Providers are generally not liable for errors of judgment if they acted conscientiously and based their decisions on sound clinical reasoning.

In non-emergency settings, where resources and time are typically sufficient, adherence to these standards is closely scrutinized. Courts expect healthcare providers to fully comply with diagnostic and treatment protocols, obtain informed consent, and document their clinical decisions thoroughly. Deviations from established standards without strong justification frequently result in findings of liability.

The legal foundations of medical malpractice are deeply rooted in the principles of negligence, focusing on duty of care, breach, causation, and harm. In non-emergency situations, these principles are applied through established professional customs, guidelines, and reasonableness assessments, providing a relatively predictable framework for resolving disputes (O'Driscoll *et al*., 2017; Askitopoulou *et al*., 2017). However, these traditional standards may become difficult to apply in emergency settings like the COVID-19 pandemic, where clinical uncertainty, resource constraints, and rapidly changing guidelines complicate the assessment of reasonable care. As such, understanding these foundational principles is essential for reassessing liability frameworks in future emergency healthcare situations.

2.2 COVID-19 and Emergency Healthcare Challenges

The COVID-19 pandemic created unprecedented challenges for healthcare systems worldwide, exposing structural weaknesses and forcing significant deviations from standard healthcare practices. As the pandemic unfolded, healthcare providers operated under conditions that were vastly different from ordinary clinical environments, characterized by resource scarcities, shifting medical protocols, and workforce disruptions (Wolfenden *et al*., 2019; Keck and Lachenal, 2019). These factors collectively impacted the standard of care expected from healthcare professionals, leading to ethical and legal dilemmas surrounding medical liability.

One of the most critical challenges during the pandemic was the acute shortage of essential medical resources, including ventilators, personal protective equipment (PPE), intensive care unit (ICU) beds, and medications. Health systems in many countries, even those with high-resource infrastructures, faced overwhelming patient loads that far exceeded existing capacities. Shortages of ventilators forced clinicians to make life-and-death decisions regarding which patients would receive mechanical ventilation, often based on triage protocols developed under crisis conditions.

Similarly, insufficient supplies of PPE jeopardized both patient safety and healthcare worker protection, increasing infection rates among medical staff. In many regions, healthcare workers had to reuse or ration PPE, elevating personal risk and limiting the capacity for providing optimal care. These conditions deviated markedly from standard infection control protocols, complicating liability assessments under traditional legal frameworks that assume adequate resource availability (Mont *et al*., 2017; Merry and Brookbanks, 2017).

The rapidly evolving nature of COVID-19 also contributed to considerable uncertainty in treatment protocols. In the early phases of the pandemic, there was limited knowledge regarding the virus's pathophysiology, transmission dynamics, and effective treatments. Medical guidelines were frequently revised as new data emerged, creating a fluid environment where providers had to adapt their practices continuously.

Treatments such as corticosteroids, antiviral drugs, and anticoagulants were initially subject to debate, with changing recommendations from national and international health authorities. Experimental therapies were often administered

under emergency-use authorizations or compassionate-use programs, further complicating the determination of what constituted reasonable medical care (Kuehn, 2017; Termini, 2018). The lack of standardized, evidence-based treatment protocols during the early stages of the pandemic made it challenging for healthcare providers to adhere to conventional standards of practice.

The pandemic also triggered widespread workforce shortages due to illness, burnout, and quarantine measures affecting healthcare professionals. In many healthcare facilities, staff shortages led to increased workloads and longer shifts, elevating risks of fatigue-related errors and reducing the ability to provide meticulous care (Garrubba and Joseph, 2019; Ticharwa *et al*., 2019).

In addition, many healthcare workers were redeployed from their usual specialties to high-demand areas such as emergency departments, ICUs, or COVID-19 wards. Physicians and nurses from fields like dermatology, orthopedics, and anesthesiology were often reassigned to manage COVID-19 patients, sometimes with minimal relevant training. This redeployment, while necessary to address staffing shortages, raised concerns about competency and liability, particularly in high-acuity cases requiring specialized skills.

The extreme conditions of the pandemic led to significant shifts in how risk-benefit assessments were performed. Standard medical practice typically requires individualized patient assessments that consider risks, benefits, and available alternatives. However, under pandemic conditions, such individualized care often had to yield to broader public health considerations and resource constraints.

Healthcare providers were frequently forced to balance the risks to individual patients against the need to conserve resources for others who might derive greater benefit. For example, decisions to delay elective surgeries or limit ICU admissions were often made based not on clinical judgments alone but also on resource preservation strategies and broader societal needs.

These changes complicated the application of traditional legal standards that assess medical negligence based on patient-specific decision-making. Courts and legal scholars have since debated whether pandemic-era risk assessments, driven by systemic pressures, can justifiably lower the standard of care expected from healthcare professionals.

Perhaps the most ethically and legally fraught issue during COVID-19 was the need for triage—the systematic prioritization of patients for scarce resources. Triage protocols were implemented in many jurisdictions to determine which patients would receive ICU beds, ventilators, and other critical interventions. These decisions were often made rapidly, with limited information, and under extreme psychological pressure.

Many triage protocols relied on utilitarian principles, such as maximizing the number of lives saved or maximizing life-years. Criteria frequently included factors such as age, comorbidities, and likelihood of survival, raising concerns about discrimination against older adults, people with disabilities, and other vulnerable groups. While these protocols aimed to provide a fair and efficient allocation of resources, they also posed legal risks, particularly if triage decisions were perceived as discriminatory or inconsistent with constitutional protections.

To provide legal cover for such decisions, some jurisdictions adopted crisis standards of care—officially sanctioned guidelines that permit deviations from normal practice in emergency situations. These standards acknowledge that under crisis conditions, healthcare providers may be unable to meet usual expectations of care and thus require legal protection from liability (Leider *et al*., 2017; Nouvet *et al*., 2018). However, in many regions, crisis standards were either absent or inconsistently applied, leaving healthcare providers in legal uncertainty.

The COVID-19 pandemic exposed the significant gap between traditional standards of medical care and the realities of emergency healthcare settings. Resource shortages, evolving protocols, and workforce disruptions forced healthcare providers to adapt rapidly, often under conditions that made adherence to normal standards of care impossible. Altered risk assessments and difficult triage decisions became necessary, but they also generated legal and ethical dilemmas regarding medical liability.

This experience underscores the urgent need to reassess liability frameworks and develop adaptive standards that recognize the unique challenges of healthcare emergencies. Without such reforms, healthcare providers remain vulnerable to legal risks in future crises, potentially deterring critical medical interventions during emergencies.

2.3 Legal Responses During COVID-19

The COVID-19 pandemic prompted unprecedented legal responses as nations sought to balance the urgent need for rapid healthcare delivery against the risk of escalating medical malpractice claims. A key mechanism adopted by many jurisdictions was the implementation of liability shields and immunity laws, designed to protect healthcare workers and institutions from legal actions arising from emergency care provision (Flaumenhaft and Ben-Assuli, 2018; Allhoff and Potts,, 2019). These legal protections were often enacted through emergency legislation or executive orders, with significant implications for both healthcare systems and legal accountability frameworks.

In the United States, several states introduced broad liability protections for healthcare workers during the pandemic. For example, New York's Emergency Disaster Treatment Protection Act (EDTPA) granted immunity to healthcare facilities and professionals for harm resulting from acts or omissions in the course of providing COVID-19-related services, except in cases of gross negligence or willful misconduct. Similarly, New Jersey and Illinois enacted laws shielding healthcare providers from civil liability for injury or death caused by their acts or omissions while responding to the pandemic, provided their actions were in good faith and not grossly negligent (Bullock *et al*., 2017; McCollum, 2019). At the federal level, the Public Readiness and Emergency Preparedness (PREP) Act extended liability immunity to manufacturers, distributors, and providers of medical countermeasures against COVID-19.

Italy, which faced one of Europe's earliest and most severe COVID-19 outbreaks, also adopted liability shields for healthcare workers. The Italian government issued Decree-Law No. 44 of 2021, which limited healthcare professional liability to cases of gross negligence or intentional misconduct during the pandemic. The legislation acknowledged the extraordinary difficulties faced by medical personnel and emphasized the importance of protecting those acting in good faith under emergency conditions.

In India, while no sweeping national liability shield was implemented, various state governments issued guidelines to

mitigate the legal exposure of healthcare workers. Some states adopted indemnity provisions in healthcare contracts for COVID-19 services, and the central government provided advisory support to protect frontline workers from unwarranted legal actions. Although lacking the formal legal immunity seen in the U.S. or Italy, these measures reflected a similar intent to minimize liability risks during the crisis (Damrosch, 2019; Orakhelashvili, 2019).

Judicial interpretations further shaped the scope of these protections. U.S. courts generally upheld state immunity statutes but remained vigilant in reviewing claims of gross negligence (Weiland, 2017; Ponder, 2018). In Italy, courts emphasized the importance of demonstrating intentional misconduct or gross negligence before allowing liability claims to proceed. The limited litigation in India during the pandemic period reflected both the nascent state of its medical liability jurisprudence and the emphasis on protecting public health responders.

Significant variations emerged across jurisdictions in the design and application of liability protections. While the U.S. adopted a highly decentralized approach, with state-level protections varying widely in scope and duration, many European countries, including Italy, enacted national laws setting uniform standards of immunity. In contrast, several countries such as Germany and Japan chose not to adopt explicit liability shields, instead relying on existing legal principles such as force majeure and professional standards to evaluate pandemic-era medical decisions.

The comparative review reveals that countries with explicit liability shields prioritized rapid legal clarity to reduce the deterrent effects of potential lawsuits on healthcare providers. In contrast, jurisdictions without formal immunity laws tended to rely on judicial flexibility and case-by-case assessments of liability. This divergence highlights the tension between protecting healthcare workers and preserving patient rights to legal redress during crises (Jakab *et al*., 2017; Fontanelli, 2017).

The implications for transnational legal standards are profound. The absence of harmonized approaches to medical liability during the pandemic raises questions about fairness and consistency in the treatment of healthcare professionals worldwide. In global health emergencies, where cross-border medical assistance and international cooperation are common, such disparities may complicate legal accountability and undermine equitable protections for frontline workers.

Efforts to develop transnational legal frameworks for emergency medical liability could address these gaps. International organizations such as the World Health Organization (WHO) and the International Law Commission could facilitate the development of guidelines or model laws to harmonize liability protections during pandemics, balancing the need for healthcare system resilience with safeguards for patient rights. Additionally, regional legal bodies, such as the European Union, may explore coordinated approaches to medical liability in future health emergencies.

Ultimately, the COVID-19 experience underscores the critical role of legal preparedness in health crisis management. Liability shields and immunity laws, though controversial, served as essential tools in many jurisdictions to stabilize healthcare delivery under extraordinary conditions (Dunoff and Pollack, 2017; Reddy, 2019). However, these measures must be carefully designed to prevent abuse, ensure accountability for egregious misconduct, and respect the rights of affected patients. Going forward, the development of balanced legal responses will be vital for pandemic resilience and ethical healthcare governance on both national and international levels.

2.4 Ethical Considerations

Medical malpractice liability during emergencies such as the COVID-19 pandemic raises significant ethical challenges. The unprecedented conditions faced by healthcare providers, including limited resources, rapidly changing clinical protocols, and extreme workloads, have tested conventional frameworks of accountability and fairness. While legal immunity provisions and crisis standards of care may protect healthcare professionals from lawsuits, they also create moral dilemmas related to patient rights, justice, and equity (Papadimos *et al*., 2018; Terrasse *et al*., 2019). Ethical analysis of these tensions is crucial to inform future policies that balance the need for accountability with the reality of emergency medical practice.

Frontline healthcare providers during the COVID-19 pandemic were often placed in morally distressing situations. Faced with overwhelming patient volumes and resource scarcities, they were forced to make decisions that deviated from standard care practices. Many providers confronted agonizing choices over triage, treatment withholding, or rationing of limited medical supplies such as ventilators and intensive care beds (Making, 2018; Anesi *et al*., 2019). Such decisions frequently involved assessing patients' likelihood of survival, which required difficult value judgments about whose lives to prioritize.

These moral dilemmas were compounded by the rapid evolution of clinical evidence, leaving providers uncertain about the most effective interventions. As guidelines shifted, providers were expected to quickly adapt, often without adequate time for training or reflection. The risk of personal harm, including exposure to COVID-19, added further stress and complexity to their roles. Many providers also experienced psychological distress, known as "moral injury," stemming from the gap between their professional values and the constraints imposed by emergency conditions (Haight *et al*., 2017; Purcell *et al*., 2018; Burkman *et al*., 2019).

While these extraordinary circumstances necessitate a compassionate view of provider conduct, they do not eliminate the need for accountability. Ethically, healthcare systems must recognize the unique pressures faced by frontline providers, but also ensure that egregious misconduct or gross negligence remains subject to review. Balancing these goals requires carefully designed legal standards that distinguish between good faith efforts under crisis conditions and actions that fall outside acceptable boundaries.

An ethical tension arises between protecting healthcare providers from legal liability and preserving patients' rights to seek compensation for harms suffered during emergency care. Legal immunity measures, adopted in many jurisdictions during COVID-19, aimed to shield providers from litigation, encouraging them to act decisively without fear of lawsuits (Times, 2019; Manalo, 2019). From an ethical perspective, these protections are defensible to the extent that they prevent defensive medicine and promote rapid clinical decision-making under high-risk conditions.

However, granting broad immunity raises concerns about the erosion of patient rights. Patients harmed by substandard care during the pandemic may find themselves unable to pursue legal recourse, even in cases involving preventable injury or

death. This raises questions about fairness and justice, particularly for those who were already vulnerable or at heightened risk of medical harm.

Ethically, legal frameworks must carefully calibrate the scope of immunity to avoid undermining accountability. Immunity provisions should not be absolute; they must include exceptions for gross negligence, willful misconduct, or clear breaches of professional duty. Furthermore, healthcare institutions, rather than individual providers, may be better positioned to absorb liability during crises, allowing for institutional accountability while protecting frontline workers from undue legal risk.

Equity is a fundamental ethical concern in discussions of medical malpractice liability during emergencies. Historically marginalized populations—including racial and ethnic minorities, people with disabilities, older adults, and those living in poverty—are disproportionately affected by both the pandemic itself and systemic barriers to healthcare. These groups often experience higher rates of severe COVID-19 outcomes, limited access to quality care, and greater exposure to structural inequities.

Legal immunity measures risk compounding these disparities by excluding vulnerable patients from seeking justice for medical harms. In many cases, these populations already face obstacles to accessing the legal system, such as financial constraints, language barriers, and lack of legal representation. Broad liability shields may further limit their ability to hold healthcare systems accountable for substandard care.

Ethically, it is essential to ensure that emergency liability protections do not perpetuate or exacerbate health inequities. Policymakers should consider mechanisms to preserve access to justice for vulnerable groups, even during crises. For example, targeted compensation programs or independent review panels could provide alternative avenues for redress, particularly for those disproportionately harmed by emergency medical care.

Additionally, equity-focused ethical frameworks emphasize the importance of procedural justice in healthcare decision-making. During COVID-19, some jurisdictions developed crisis standards of care that explicitly incorporated equity considerations, such as prioritizing disadvantaged groups for certain resources or avoiding discriminatory criteria in triage protocols (Wiley, 2019; Halabi, 2019). These efforts reflect a broader commitment to fairness in both clinical and legal responses to emergencies.

Moreover, engaging affected communities in the development and evaluation of emergency legal policies can help ensure that diverse perspectives are incorporated. Community engagement fosters transparency and trust, essential for ethical legitimacy in both public health and legal frameworks. Ethical guidance from bodies such as the World Health Organization also underscores the need for inclusive, participatory approaches in emergency preparedness and response.

The ethical considerations surrounding medical malpractice liability in emergency settings like the COVID-19 pandemic are deeply complex, involving tensions between provider protections, patient rights, and social equity. While it is necessary to shield healthcare professionals from undue legal risks during crises, this must not come at the expense of accountability or justice, particularly for vulnerable populations. Balancing these competing ethical obligations requires nuanced legal frameworks that recognize the realities of emergency care while safeguarding patient rights and equity. Going forward, integrating ethical principles into emergency liability reforms will be essential for fostering resilient, just, and compassionate healthcare systems capable of responding to future public health emergencies (Madrigano *et al*., 2017; Comes *et al*., 2019).

2.5 Alternative Models for Liability Reform

The COVID-19 pandemic underscored the limitations of traditional medical malpractice frameworks in emergency healthcare contexts, where clinicians operate under extraordinary pressures and systemic constraints. In response, legal scholars, policymakers, and bioethicists have increasingly explored alternative liability models that balance the need for accountability with the operational realities of public health crises (Rimmer, 2017; Chekhovska *et al*., 2019). Two prominent approaches are no-fault compensation systems and pandemic-specific legal frameworks as shown in figure 2. These models aim to ensure fair compensation for patients while safeguarding healthcare providers from excessive litigation risks during emergencies.

No-fault compensation systems offer a significant departure from conventional tort-based malpractice models. Under such systems, injured patients receive compensation for medical harm without the need to prove provider negligence or misconduct. Instead, compensation is awarded based on the occurrence of an adverse medical event, provided that it meets certain eligibility criteria.

During emergencies such as the COVID-19 pandemic, no-fault systems present several advantages. First, they reduce the adversarial nature of malpractice litigation, which can be particularly problematic during crises when healthcare providers are already under severe psychological and operational stress. By removing the need to assign fault, these systems allow for faster resolution of claims and timely compensation to affected patients.

Second, no-fault mechanisms promote a more equitable approach to patient redress. In many cases during the pandemic, adverse outcomes resulted from systemic factors—such as resource scarcity, delayed care due to overwhelmed health systems, or rapidly evolving treatment protocols—rather than individual errors. Traditional fault-based systems are ill-suited for addressing such harms, whereas no-fault schemes recognize the broader context and compensate patients accordingly.

Third, no-fault compensation can enhance public trust in healthcare institutions. By offering a reliable mechanism for addressing medical injuries during crises, governments can demonstrate their commitment to fairness and patient welfare, potentially reducing public anger or litigation pressures after the emergency has subsided.

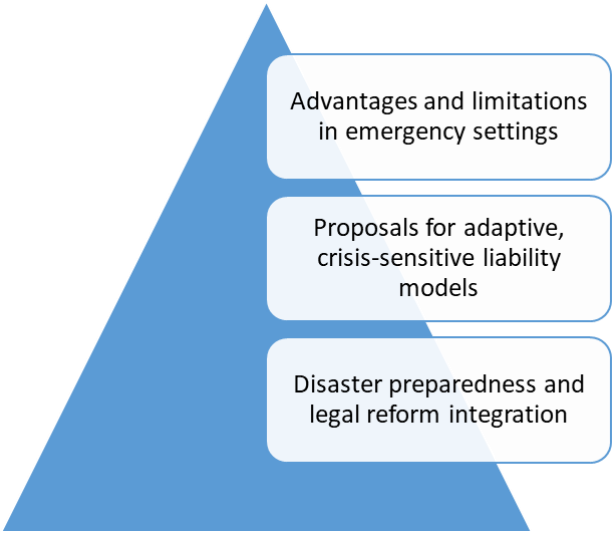

Fig 3: Alternative Models for Liability Reform

Despite their advantages, no-fault compensation systems also face notable limitations. One major concern is financial sustainability. Large-scale emergencies often involve substantial numbers of patients who may experience adverse outcomes, potentially generating high compensation costs. Without careful fiscal planning and adequate funding mechanisms, no-fault systems may struggle to remain solvent.

Additionally, critics argue that no-fault systems may weaken incentives for healthcare providers and institutions to maintain high-quality care. By removing the deterrent effect of liability, these systems risk fostering complacency or reducing attention to safety protocols, particularly in resource-constrained environments.

Administrative complexity poses another challenge. Designing an effective no-fault system requires detailed criteria for compensation eligibility, clear definitions of compensable events, and robust mechanisms for claim review (Fei and Peng, 2017; Urho, 2018). During fast-moving emergencies, establishing and implementing such systems may prove difficult without prior planning.

Pandemic-specific legal frameworks represent another alternative approach, tailored specifically to the unique circumstances of public health emergencies. These frameworks generally offer conditional liability protections to healthcare providers, while retaining accountability mechanisms for gross negligence or intentional misconduct.

One proposal involves the creation of "emergency liability shields" that activate automatically upon the declaration of a public health emergency. Such shields would provide time-limited immunity for healthcare professionals who deliver care in good faith under crisis conditions, including those working outside their typical scope of practice. However, these shields would preserve liability for cases involving egregious behavior, ensuring that patients still have recourse in situations of extreme malpractice.

Another approach entails "tiered immunity models", which adjust liability protections based on the severity of the emergency and the availability of healthcare resources. For instance, broader protections could be granted in settings experiencing acute shortages, while normal liability standards might remain in place where resources are adequate.

Importantly, pandemic-specific frameworks often emphasize the role of scientific evidence and evolving clinical guidelines in defining the standard of care. By explicitly incorporating public health directives, these models encourage healthcare providers to align their practices with authoritative recommendations, offering legal protection for actions that follow official protocols.

For pandemic-specific frameworks to be effective, they must be integrated into broader disaster preparedness and healthcare governance systems. This integration involves several key steps; Pre-Established Legal Mechanisms, governments should develop emergency liability frameworks in advance of crises, ensuring that clear rules are in place before emergencies arise. These mechanisms should be designed through inclusive processes, incorporating input from healthcare providers, patient advocacy groups, legal experts, and ethicists. Training and Awareness, healthcare workers must be educated about the legal protections and obligations that apply during emergencies. Clear communication regarding legal standards can help reduce fear of litigation and encourage ethical, evidence-based care. Oversight and Accountability, even during emergencies, oversight mechanisms should remain functional (Leider *et al*., 2017; Sims *et al*., 2019). Independent review boards or ombudsman offices can monitor care delivery, investigate complaints, and recommend corrective actions where necessary. Linking to Compensation Systems, pandemic-specific frameworks can be combined with no-fault compensation mechanisms to ensure comprehensive patient protection. For example, patients denied the right to sue under liability shields could automatically become eligible for compensation through government-funded programs. Equity Considerations, legal reforms must explicitly address health equity concerns. Frameworks should prevent discriminatory practices in triage, treatment, and compensation processes. Additionally, they must ensure that vulnerable populations retain avenues for legal recourse when appropriate.

Both no-fault compensation systems and pandemic-specific legal frameworks offer promising alternatives to traditional medical malpractice models in emergency settings. No-fault systems can provide rapid, equitable compensation to patients without burdening providers with legal disputes, while pandemic-specific frameworks offer conditional liability protections tailored to crisis conditions (Laarman and Akkermans, 2018; Gonzalez, 2019). However, these models

require careful design, adequate funding, and integration with disaster preparedness strategies to be effective.

Future legal reforms should focus on combining the strengths of both approaches, creating adaptive liability systems that promote fairness, resilience, and accountability during public health emergencies. Proactively establishing these frameworks, along with education, oversight, and equity safeguards, will be essential for ensuring that healthcare systems are better prepared to navigate the legal and ethical complexities of future crises (Smith *et al*., 2018; Chitta *et al*., 2019).

2.6 Policy Recommendations and Future Directions

The COVID-19 pandemic has highlighted critical gaps in medical malpractice liability frameworks, particularly during public health emergencies where healthcare providers face exceptional operational pressures. Moving forward, there is an urgent need for policy reforms that establish liability regimes capable of balancing legal accountability with the unique challenges of emergency healthcare delivery. Three key policy priorities emerge: the development of flexible and transparent liability standards, enhancement of legal clarity while protecting both patient and provider interests, and the integration of liability frameworks within broader pandemic preparedness strategies.

First, the development of flexible, transparent liability standards specifically designed for emergency situations is essential. Traditional malpractice liability models are often rigid and poorly suited for the realities of crisis healthcare delivery, where providers may face overwhelming caseloads, resource shortages, and rapidly evolving clinical guidelines. Policymakers should design emergency-specific liability standards that explicitly account for these factors. Such frameworks should incorporate criteria for assessing clinical decision-making under uncertainty, including the availability of resources, adherence to provisional clinical protocols, and the context of emergency triage systems.

Flexibility in liability standards can be operationalized through legislative instruments such as temporary immunity laws or modified negligence thresholds that only permit liability in cases of gross negligence or willful misconduct during emergencies. However, flexibility must not compromise transparency. Clear legal definitions of key terms such as "gross negligence," "good faith," and "emergency circumstances" are critical to ensuring consistent interpretation and application. Statutes and regulations should be drafted in accessible language to enable healthcare providers to clearly understand their legal responsibilities during crises.

Second, enhancing legal clarity while safeguarding both patient and provider interests is vital for maintaining trust in healthcare systems during emergencies. Legal uncertainty can deter providers from taking necessary actions, while overly broad immunity provisions may undermine patient rights and public confidence. To reconcile these competing interests, a tiered approach to liability can be considered. Under such a model, baseline legal protections would apply to providers acting in accordance with officially sanctioned emergency protocols, with heightened scrutiny reserved for cases involving egregious misconduct or deliberate harm.

Moreover, legal frameworks should incorporate procedural safeguards to ensure fairness. Mechanisms such as independent review boards or special pandemic claims tribunals can provide expedited, impartial resolution of malpractice claims during health emergencies. These bodies could focus on evaluating the reasonableness of provider actions under the specific constraints of the crisis, offering an alternative to protracted court litigation. Additionally, transparent reporting of the outcomes of such cases can reinforce accountability and inform future legal standards.

Patient compensation schemes represent another complementary measure. No-fault compensation funds, as used in some disaster-related legal systems, could provide timely financial support to patients harmed during emergencies without requiring proof of provider negligence. Such schemes can alleviate the adversarial nature of malpractice litigation, reduce the burden on courts, and preserve healthcare workforce morale. However, these funds should be carefully designed to ensure equitable access, adequate funding, and independent administration.

Third, integrating liability reforms with broader pandemic preparedness strategies is necessary for a comprehensive approach to health system resilience. Liability frameworks should not be treated in isolation but rather as part of a holistic legal and policy infrastructure for emergency response. Governments should incorporate legal risk assessments into their pandemic preparedness plans, identifying potential liability exposures and developing mitigation strategies in advance of crises.

Cross-sector collaboration will be essential in this process. Legal experts, healthcare professionals, public health authorities, and patient advocacy groups should work together to co-design liability policies that reflect diverse perspectives and practical realities. International cooperation is also crucial, given the cross-border nature of pandemics. Regional organizations and global health bodies could play a key role in facilitating the sharing of best practices and the harmonization of liability standards where appropriate.

In addition, periodic review and revision of emergency liability laws are needed to ensure they remain fit for purpose as healthcare technologies, treatments, and emergency response models evolve. Policymakers should establish sunset clauses or mandatory review provisions within emergency liability statutes to avoid the risk of permanent erosion of patient rights.

Ultimately, the COVID-19 pandemic offers valuable lessons on the necessity of legal preparedness in public health emergencies. By adopting flexible, transparent, and balanced liability frameworks, policymakers can promote both effective healthcare delivery and the protection of individual rights during crises. Embedding these reforms within broader pandemic response strategies will strengthen health system resilience and ensure more equitable and effective management of future emergencies.

3. Conclusion

The COVID-19 pandemic has revealed critical gaps in traditional medical malpractice frameworks, highlighting the urgent need for legal systems to adapt to the realities of emergency healthcare. The unprecedented scale of the pandemic placed healthcare providers in extraordinary circumstances, marked by resource shortages, evolving clinical standards, and high levels of uncertainty. Legal doctrines centered on negligence and fixed standards of care proved difficult to apply, as many adverse outcomes resulted from systemic constraints rather than individual fault. The widespread adoption of liability shields and emergency-specific legal protections underscored this disconnect and

demonstrated the need for more flexible, context-sensitive approaches to medical liability during public health emergencies.

A key lesson from COVID-19 is the importance of balancing accountability and fairness in crisis settings. While healthcare workers require protection from undue litigation to enable rapid, life-saving decisions, patients also deserve avenues for compensation and justice. No-fault compensation schemes and pandemic-specific liability frameworks emerged as promising alternatives, offering a more equitable and efficient approach to addressing harms during emergencies. However, these models also present challenges related to financial sustainability, implementation complexity, and maintaining incentives for high-quality care.

Looking ahead, proactive legal reforms are essential to strengthen the resilience and ethical accountability of healthcare systems in future crises. Policymakers must prioritize the development of adaptive legal mechanisms that incorporate emergency-specific liability protections, while also embedding safeguards for patient rights and equity. Integrating these legal reforms into broader disaster preparedness strategies will ensure that healthcare systems can respond effectively to future pandemics without sacrificing accountability or public trust. Additionally, ongoing dialogue among legal experts, healthcare providers, ethicists, and community stakeholders will be vital for designing fair, transparent, and sustainable liability frameworks that uphold both clinical integrity and societal justice during health emergencies.

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