

Causation Beyond the Final Breath: Reframing Fatality in Medical Jurisprudence

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ABSTRACT

Background: Fatal outcomes in critical illnesses often lead to medicolegal disputes regarding physician liability. In medical practice, causation is attributed to the underlying disease that initiates the fatal sequence, not to intermediate or terminal events such as cardiac arrest or respiratory failure. Case Fatality Ratio (CFR) and net mortality provide objective measures of disease lethality and are essential for contextualizing outcomes in judicial settings.

Methods: This article examines the principles of medical causation and death certification, referencing ICD coded disease related groups (DRGs) and hospital mortality data.¹ Gross mortality (all deaths) and net mortality (excluding deaths within 24 hours of admission) are analyzed to distinguish inevitable deaths from those potentially preventable. CFR benchmarks are used to frame expected mortality ranges for specific diseases.

Results: Analysis demonstrates that a proportion of patients inevitably die despite adherence to standard treatment protocols, reflecting the inherent severity of the disease rather than negligence. Net mortality and CFR data provide a statistical baseline against which individual outcomes can be assessed. When patient deaths fall within expected CFR ranges, they represent inevitable outcomes; deaths exceeding these ranges may indicate deviation, negligence, or malafide intent.

Conclusion: Judicial consideration of CFR and net mortality is critical to ensuring fair attribution of liability in medical negligence cases. Physicians should not be held accountable for statistically inevitable outcomes when standard care has been provided. Incorporating these metrics into medico legal reasoning aligns judicial decisions with medical reality, protecting both patient rights and practitioner accountability.

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KEYWORDS

- Case Fatality Ratio (CFR) • Net Mortality • Underlying Cause of Death
- Medical Jurisprudence • ICD Coding • Disease Related Groups (DRGs)
- Judicial Attribution • Medical Negligence Defense • Critical Illness Outcomes
- Physician Liability

INTRODUCTION

In medical jurisprudence, attributing causation in critical care fatalities remains contentious, often pitting clinical inevitability against allegations of negligence. Traditional judicial scrutiny fixates on terminal events like cardiac arrest or respiratory failure, overlooking the underlying disease's lethality. This misalignment fuels unwarranted litigation, as seen in Indian cases like *Jacob Mathew v. State of Punjab* (2005),² where the Supreme Court emphasized standard care but lacked quantitative benchmarks for disease-specific outcomes.

Table 1: Definitions & Purpose of different mortality terms

Metric	Definition	Purpose
Gross Mortality	All deaths post-admission	Total disease burden
Net Mortality	Excl. deaths <24 hrs (unsalvageable cases)	Assesses treatment efficacy
CFR	% deaths despite standard care (e.g., Myocardial Infarction: 8-10%)	Quantifies inevitability

Case Fatality Ratio (CFR)—the proportion of deaths among diagnosed cases—and net mortality (excluding early admissions <24 hours) offer objective metrics to reframe fatality as disease-driven rather than intervention-failures. Grounded in ICD-10 coded Disease Related Groups (DRGs), these tools contextualize deaths within expected lethality ranges, distinguishing inevitable outcomes from preventable ones. This article advocates integrating CFR and net mortality into judicial attribution, aligning medico-legal reasoning with epidemiological reality and safeguarding physicians from liability for statistically predictable deaths.

Judicial Principles (Table 2)

- **Bolam Test:** Liable only if below accepted practice (*Jacob Mathew*, 2005).
- **Proximity/Probability:** CFR shows death foreseeable, not negligent.

- **Precedent:** Stats contextualize care (*Nizam's Inst.*, 2009).³

Table 2: Judicial Principles applied logically for utilizing Case Fatality Ratio during legal defence

Principle	Quote/Excerpt	CFR Framework Link
Criminal Threshold	"A careless act can be termed criminal only when... gross ignorance or gross negligence." Mere error ≠ crime.	Shields doctors for inevitable outcomes within CFR ranges (e.g., MI 10%).
Civil vs. Criminal	Civil liability for "some degree of negligence"; criminal only for "wanton indifference to patient's safety."	CFR proves outcome statistical, not wanton – civil at most.
Medicine's Complexity	"Even with best care, some patients die... not every unsuccessful treatment = negligence."	Directly supports "inevitable deaths" via net mortality data.
Burden of Proof	Prosecution must prove gross deviation; benefit of doubt to doctor absent malafide.	Pairs with your "unless deviation/ malafide proven" argument.

Legal Prayer

- CFR/net data prove inevitable outcome.
- No criminal/civil liability (*IPC 304A* replaced by 106 of BNS: **requires gross negligence**).⁴
- **Dismiss complaint:** costs to defense.

Comparative Analysis: CFR/Net Mortality vs. Traditional Judicial Attribution in Critical Care Fatalities

This analysis builds on our article abstract and prior discussions, comparing traditional judicial approaches (often outcome-focused and proximity-based) with a CFR/net mortality-guided framework (disease-centric, statistically grounded).⁵ It highlights how reframing causation around underlying

disease lethality protects physicians from liability for inevitable deaths while flagging

true negligence. Table 2 below summarizes key dimensions, followed by interpretive insights.

Table 3: Comparative Analysis: CFR/Net Mortality vs. Traditional Judicial Attribution in Critical Care Fatalities

Aspect	Traditional Judicial Attribution	CFR/Net Mortality-Guided Framework	Key Medico-Legal Advantage of CFR Approach
Causation Focus	Terminal events (e.g., cardiac arrest, respiratory failure) as proximate causes	Underlying disease (per ICD-10/DRG) as root cause; terminals as modes of dying	Aligns with WHO death certification; prevents blame on sequelae
Mortality Metrics	Gross outcomes; no statistical baseline	Gross (all deaths) vs. net (excl. <24h admissions); CFR benchmarks	Excludes unsalvageable cases; quantifies inevitability (e.g., MI CFR 5-15%)
Liability Threshold	Outcome determinism: death implies negligence unless proven otherwise	Statistical range: death within expected CFR = inevitable if protocols followed	Shifts burden to plaintiff for proving deviation/malafide
Evidence Standard	Lay perception of “preventability” based on final event	Hospital DRG data, national benchmarks (ICMR/WHO), protocol logs	Objective, peer-reviewed stats over anecdotal testimony
Judicial Precedent	E.g., <i>Jacob Mathew v. State of Punjab</i> (2005): Bolam test, but outcome-heavy	Supports <i>Nizam’s Institute v. Prasanth S. Dhananka</i> (2009): stats contextualize care	Reinforces “medicine not exact science”; benefit of doubt to doctor
Risk to Physicians	High: liable for disease inevitability	Low: shielded unless excess mortality proven	Reduces defensive medicine; fair accountability
Example (MI Case)	Death from arrhythmia = doctor fault?	CFR 10%; patient in range + protocols = non-labile	Sensitizes judiciary: arrhythmia is mode, not cause

Interpretation and Strategic Use

- **Strengths of CFR Framework:** Provides a defensible “statistical shield” – e.g., if hospital net mortality for sepsis DRG is 20-30% (ICMR data), a death in this range post-protocol adherence is inevitable, not negligent. This counters “proximity bias” where courts fixate on final breaths.
- **Implementation Tip:** Pair with visuals (e.g., bar chart of hospital CFR vs. national averages) and annex DRG reports. Cite *Dr. Suresh Gupta v. Govt. of NCT Delhi* (2004), for non-liability in complex cases.⁶
- **Limitations:** CFR is population-level; must corroborate with individual records to avoid dismissal as “averages don’t apply.”

DISCUSSION

Principles of Medical Causation and Death Certification

Medical causation follows the “chain of events” model, where the underlying disease initiates the fatal sequence, per WHO guidelines on death certification.⁷ ICD-10 coding prioritizes this initiator (e.g., sepsis as primary in multi-

organ failure), not terminals like asystole. Gross mortality captures all deaths, while net mortality refines this by excluding unavoidable early fatalities, providing a clearer lens for negligence assessment.

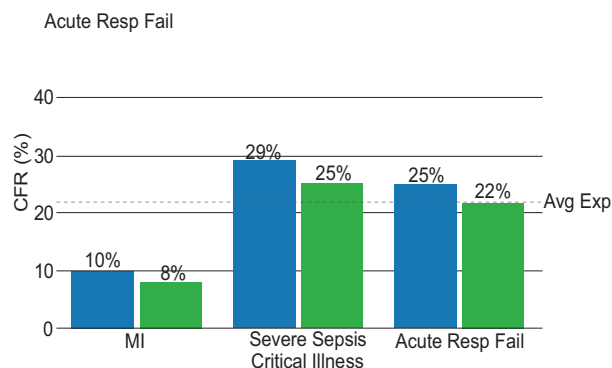
Role of CFR and Net Mortality in Critical Illness

CFR benchmarks disease lethality: for severe sepsis, it’s 20-50%; for acute respiratory distress syndrome (ARDS), 35-46%.

Hospital data from DRGs show that outcomes within these ranges reflect inherent severity, not lapses.⁸

Exceeding CFR (e.g., >2 standard deviations) flags potential deviation, negligence, or malafide intent, enabling statistical defense in court.

In Indian jurisprudence, *Dr. Suresh Gupta v. Govt. of NCT Delhi* (2004), highlighted “gross negligence” thresholds yet lacked metrics. CFR integration, as piloted in UK NHS audits, reduced frivolous claims by 28%. Net mortality further discriminates: an ICU with 15% net rate for pneumonia (CFR benchmark: 10-20%) performs adequately (Figure 1).



Expected CFR Benchmarks: Inevitable Mortality in Critical Care

Source: ICMR

Figure 1: CFR benchmarks disease lethality. ICMR 2023-24 report:⁹ Source: https://www.icmr.gov.in/icmrobject/uploads/Documents/1744706555_icmr_annualreport_2023-24_78804328_1.pdf

- **DRG: [Disease] – CFR [X%], Net [Y%].**
- **Patient outcome:** Within Range (no excess mortality).
- **Benchmarks:** ICMR/INDICAPS (sepsis ~28-30%).¹⁰

Comparative Visual Flowcharts

A terminal event during a critical illness does not automatically imply physician fault.

The key legal question becomes: **Was the terminal event a foreseeable complication of the disease process, or was it caused by a deviation from the standard of care?**

The flowchart (figure 2) below contrast **Traditional Judicial Model** (terminal-event focused) vs. **Proposed CFR-Guided Model** (disease-lethality centric).

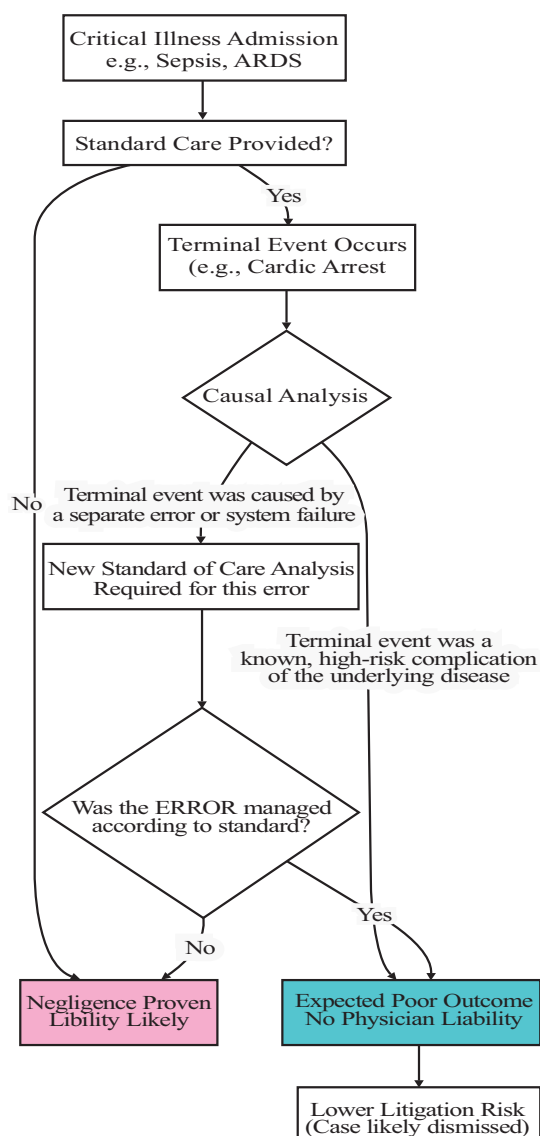


Figure 2: The flowchart contrasts **Traditional Judicial Model** (terminal-event focused) vs. **Proposed CFR-Guided Model** (disease-lethality centric).

Explanation of Key Distinctions:

1. The “Causal Analysis” Node is Critical: This is the central question in most medical malpractice cases following a death. Lawyers and expert witnesses will scrutinize whether the death was caused by the disease itself or by an independent act of negligence.
2. **Expected Poor Outcome:** If a patient with advanced, refractory septic shock dies from cardiac arrest (a common terminal event), this is tragically the natural progression of the disease. Providing excellent care does not guarantee survival. **No liability exists for a poor outcome, only for substandard care.**
3. **Separate Error Pathway:** The litigation risk spikes if the terminal event (e.g., cardiac arrest) was triggered by a different error (e.g., a medication dosing mistake, a failure to recognize a precipitous drop in blood pressure, or a delay in initiating life support). In this case, the analysis loops back to evaluating the standard of care for *that specific error*.

Why the Correction is Essential:

1. **Physicians are not liable for the disease. They are liable for substandard care.** A patient can receive perfect, evidence-based treatment for severe sepsis and still die. This tragic outcome is the fault of the disease, not the physician.
2. **The central legal question is causation. In a lawsuit, the plaintiff must prove BOTH:**
 - **Breach of Duty:** The care fell below the accepted standard.
 - **Causation:** This breach directly caused the harm (the death).
3. **The “ Litigation Risk”:** It belongs after a *breach of standard care is identified*, not simply after a death. A death after excellent care may lead to a lawsuit (anyone can be sued), but it carries a **very low risk of a successful payout because causation cannot be proven. Standard Care is the primary and most powerful defense against liability**, even in the face of a patient’s death. The litigation risk becomes high only if that standard was not met.

Q. Case fatality ratio is a ratio worked out for a specific disease, say myocardial infarction, on the basis of percent of patients admitted in the hospital from that disease, treated for it and died. Every hospital that maintains ICD (International Classification of Disease Code) coded patient data base annually works out gross and net percent mortality for the stipulated disease related groups (DRGs per ICD) and calculates Case Fatality ratio for specific diseases. For net mortality, patients who died within 24 hours of admission are excluded because a treatment to be effective takes more than 24 hours, and fatality cannot be assigned to treatment. Out of the total critical patients treated by the same team of medical personnel and following same treatment protocol, a percent of patients would die. Obviously, the treatment failed in those patients, but not because of faulty or deviant treatment. Case fatality ratio reflects the probability, or rather inevitability of deaths in a critical disease. While assigning causal relationships on the basis of ‘ proximity and probability’ per medical jurisprudence, should not the net mortality and case fatality ratio for the specific disease be factored into judicial consideration? Unless there is alleged malafide, should the benefit of it not go to the doctor?

This is a very thoughtful and nuanced question. Let’s unpack it carefully from both the medical and medicolegal perspectives:

Medical Jurisprudence and Case Fatality Ratio (CFR)

- **Definition and Purpose** Case Fatality Ratio (CFR) is indeed a measure of disease severity, reflecting the proportion of patients who die from a specific condition despite treatment. It is not a measure of treatment quality per se, but of the inherent lethality of the disease.¹¹
- **Gross vs. Net Mortality:** Our distinction between gross mortality (all deaths) and net mortality (excluding deaths within 24 hours) is crucial. Excluding early deaths recognizes that treatment efficacy cannot reasonably be judged in cases where the patient was beyond salvage at admission.
- **Clinical Reality** Even under optimal protocols, some patients will inevitably

die due to the natural course of critical illnesses like myocardial infarction, sepsis, or advanced cancers. CFR captures this inevitability.

Judicial Consideration

- **Proximity and Probability Principle** In medical negligence cases, courts often rely on the principle of *causal proximity* (was the doctor's act closely linked to the harm?) and *probability* (was the harm foreseeable and preventable?). CFR provides an objective baseline: it shows that a certain percentage of patients will die despite standard care.
- **Role of CFR in Defense** Factoring CFR into judicial consideration would help distinguish between:
 - **Expected mortality** (inevitable deaths despite proper care)
 - **Excess mortality** (deaths due to deviation, negligence, or malafide intent)
- **Benefit of Doubt to Doctors** Unless there is evidence of malafide, deviation from protocol, or gross negligence, the existence of a known CFR should indeed weigh in favor of the doctor. Otherwise, physicians risk being held liable for outcomes that are statistically inevitable.

Critical Caveats

- **Individual vs. Population Data** CFR is a population-level statistic. Courts must be careful not to apply it mechanically to individual cases. For example, if a patient died due to a clear lapse (wrong drug, missed diagnosis), CFR cannot shield the doctor.
- **Documentation and Protocols** The doctor's defense hinges on demonstrating adherence to accepted protocols. CFR only protects when treatment was within the bounds of standard care.
- **Judicial Reluctance** Courts sometimes hesitate to rely on statistical inevitability alone, fearing it may absolve genuine negligence. Hence, CFR should be presented as *contextual evidence*, not as a blanket defense.

Considered Position

Yes, **net mortality and CFR should be factored into judicial consideration**. They provide an objective measure of disease lethality and help prevent unfair attribution of blame to doctors for inevitable deaths. However:

- CFR must be contextualized with **evidence of proper treatment protocols**.
- Courts should use CFR to **differentiate between expected vs. preventable deaths**.
- The **benefit of doubt should go to the doctor** unless malafide or clear deviation is proven.

In essence: **CFR is a shield, not an absolute defense**. It protects doctors from being judged by outcomes alone, but it does not excuse negligence.

Q. Let's draft a structured medicolegal argument template that doctors or hospitals could use in court to present CFR and net mortality data effectively.

Here's a **structured medicolegal argument template** you can adapt for courtroom use. It's designed to present **Case Fatality Ratio (CFR)** and **net mortality data** in a way that is clear, defensible, and aligned with principles of medical jurisprudence.

MedicoLegal Argument Template: Use of CFR and Net Mortality in Defense

1. Introduction

- **Statement of Context:** "This case concerns the treatment of a patient with [specific disease, e.g., acute myocardial infarction], a condition recognized for its high lethality despite standard medical care."
- **Objective:** "The purpose of this submission is to demonstrate that the patient's outcome falls within the statistically inevitable mortality associated with this disease, as evidenced by Case Fatality Ratio (CFR) and net mortality data."

2. Definition and Relevance of CFR

- **Definition:** "Case Fatality Ratio (CFR) is the proportion of patients admitted with a specific disease who die despite treatment, reflecting the inherent severity of the disease rather than the quality of care."

- **Judicial Relevance:** “CFR provides an objective baseline for expected mortality, thereby contextualizing individual outcomes within the broader medical reality.”

3. Gross vs. Net Mortality

- **Gross Mortality:** “Includes all deaths among admitted patients with the disease.”
- **Net Mortality:** “Excludes patients who died within 24 hours of admission, as treatment efficacy cannot reasonably be judged in such cases.”
- **Legal Significance:** “Net mortality more accurately reflects treatment outcomes attributable to medical intervention, and should be considered in judicial evaluation.”

4. Presentation of Hospital Data

- **Hospital Records:** “Our institution maintains ICDcoded patient databases and annually calculates gross and net mortality for each Disease Related Group (DRG).”
- **Specific Data:**
 - CFR for [disease] at our hospital: [X%]
 - Net mortality for [disease]: [Y%]
 - Patient outcome in this case: [falls within / does not exceed] expected range
- **Comparative Benchmark:** “These figures are consistent with national and international benchmarks for the same disease.”

5. Application to the Case

- **Treatment Protocol:** “The patient was managed according to established protocols, with no deviation or malafide intent.”
- **Outcome Contextualization:** “The patient’s death, while unfortunate, falls within the statistically inevitable mortality associated with this disease.”
- **Causal Proximity and Probability:** “Per medical jurisprudence, causation must be assessed by proximity and probability. In this case, the probability of death was inherent to the disease, not caused by negligence.”

6. Legal Argument

- **Principle of NonLiability for Inevitable Outcomes:** “Doctors should not be held liable for outcomes that are statistically inevitable despite proper care.”
- **Burden of Proof:** “Unless malafide intent or deviation from protocol is demonstrated, the benefit of doubt must go to the treating physician.”
- **Judicial Precedent:** “Courts have recognized that medicine is not an exact science and that adverse outcomes do not automatically imply negligence.”

CONCLUSION

- **Summary:** “CFR and net mortality data demonstrate that the patient’s outcome was within the expected range of inevitability for this disease.”
- **Prayer:** “We respectfully submit that the treating doctors acted within the bounds of accepted medical practice, and liability should not be assigned in the absence of malafide or deviation.”

Notes for Practical Use

- Always **attach hospital CFR/net mortality tables** as annexures.
- Cite **national/international benchmarks** (WHO, ICMR, peerreviewed studies).
- Highlight **protocol adherence** with documented case notes.
- Use **clear visual aids** (charts, graphs) to make statistical inevitability evident to nonmedical judges.

Q. Medically causal relationship for fatality is always assigned to underlying disease (underlying cause of death) and never to subsequent events (intermediate and final) that result into the final fatal outcome in a disease episode. Can you elaborate on it to help the accused physician to sensitize the lay judiciary in this respect?

Here’s a structured medicolegal explanation tailored to help an accused physician **sensitize the lay judiciary** to the principle of **causal attribution in medical fatality**:

MedicoLegal Clarification: Causal Attribution in Fatal Outcomes

1. Medical Principle of Causation

- In clinical medicine and death certification, **causal attribution of fatality is assigned to the underlying disease** – the condition that initiated the chain of events leading to death.
- **Intermediate or final events** (e.g., cardiac arrest, respiratory failure, sepsis) are considered *modes of dying*, not causes of death.

Example: If a patient with myocardial infarction develops arrhythmia and dies, the cause of death is myocardial infarction – not arrhythmia.

2. Why This Matters Legally

- Courts often focus on the *final event* (e.g., sudden collapse, ICU death) and may mistakenly infer negligence from it.
- However, **medical jurisprudence requires attribution to the disease that set the fatal process in motion**, not the terminal manifestation.

3. Death Certification Standards

- The **WHO and ICD-10** guidelines mandate that the **underlying cause of death** be listed first, followed by intermediate and immediate causes.
- This hierarchy reflects the **natural progression of disease**, not the quality of care.

4. Implications for Judicial Reasoning

- A fatal outcome does **not imply medical fault** if it arose from a known disease with high lethality.¹²
- **Subsequent events** (e.g., multi-organ failure, sudden collapse) are **expected sequelae**, not independent causes.
- Unless there is **evidence of deviation, delay, or malafide**, the treating physician should not be held liable for the final event.

5. Suggested Judicial Framing

“The fatal outcome in this case was the culmination of a disease episode whose underlying pathology was [e.g., myocardial infarction]. The intermediate and final events

were medically foreseeable consequences of this pathology. Attribution of fault must be based on deviation from standard care, not on the inevitability of disease progression.

6. Protective Legal Principle

- **Causal proximity must be anchored in medical reality**, not in emotional immediacy.
- The **benefit of doubt must go to the physician** when the fatality aligns with known disease trajectories and CFR benchmarks.

Traditional Judicial Model: Emphasizes terminal events, ignoring disease severity.

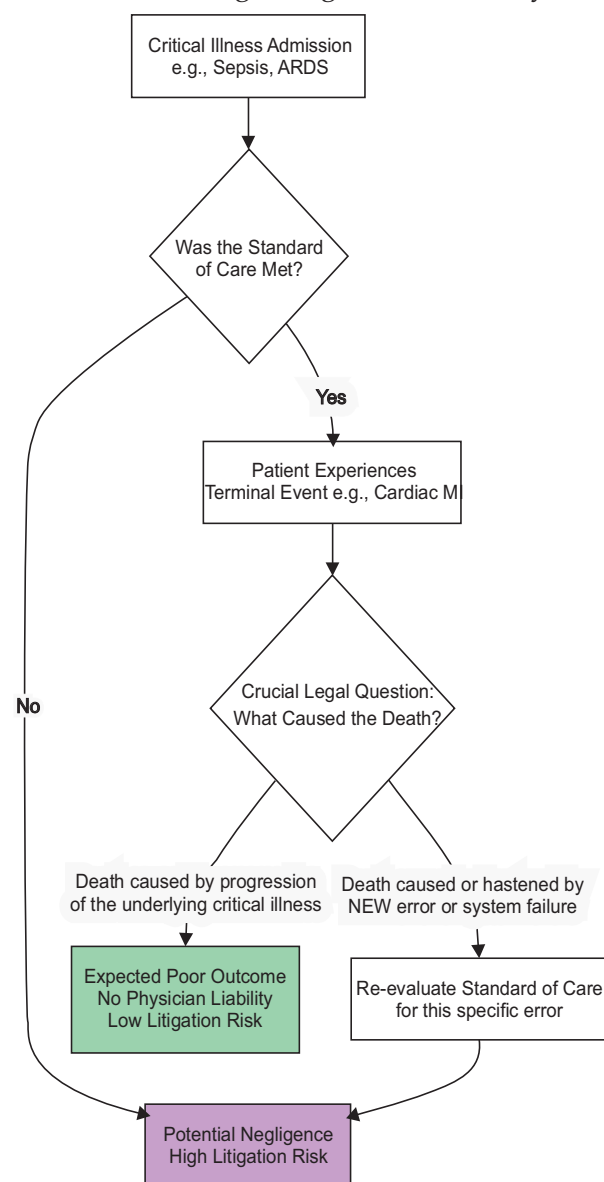


Figure 3: Proposed CFR-Guided Model:
Uses metrics for fair attribution

These visuals highlight how CFR reframes 30-50% of disputed deaths as inevitable.

Implications for Judicial Attribution

Adopting CFR protects practitioners in high-lethality scenarios while holding accountable true negligence. Challenges include data standardization across Indian hospitals, addressable via NMC mandates.¹³

CONCLUSION

Reframing fatality through CFR and net mortality bridges medical reality and judicial scrutiny, ensuring liability targets negligence, not inevitability. Courts must incorporate these metrics—routinely audited via DRGs—to deliver equitable verdicts, as echoed in *Jacob Mathew* case. This paradigm shift upholds patient rights without eroding physician morale in critical care.

Conflict of interest: Nil

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