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The Quiet Threat of Post-Pandemic Healthcare Worker Fatigue on Inpatient Safety Outcomes

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Abstract

Burnout is an occupational hazard in healthcare, often linked to reduced quality and safety. An investigation on the relationship between such problems induced by the COVID-19 pandemic and patient safety in acute-care hospitals is especially timely. Analysis of burnout trajectories suggests chronic levels of emotional exhaustion among nurses and support staff and sustained elevations in depersonalization among nurses throughout the pandemic. Evidence that higher burnout correlates with increased rates of medical errors or adverse events, a weakened safety culture, and negative reporting attitudes provides a foundation for associated decreases in patient safety. Although several mechanisms have been proposed, none have been directly tested. The elevated level of pandemic-related stressors faced by acute-care hospitals may exacerbate the usual burnout–safety relationship. Nevertheless, the available information remains useful for guiding practical action, future research, and persuasively informing policy.

Keywords : Pandemic; Burnout; Patient Safety; Acute Care; Healthcare Organizations; Crisis Management;Workforce burnout;Pandemic-related stress;Patient safety outcomes;Acute care hospitals;Healthcare worker fatigue;Nurse burnout;Physician burnout;Medical errors;Quality of care;Occupational stress;Staffing shortages;Mental health of healthcare workers;Clinical performance;Safety culture;Healthcare system resilience.

1. Introduction

The pandemic has brought workforce burnout—the chronic stress response marked by emotional exhaustion, depersonalization, and reduced personal accomplishment—to the fore in virtually all employee groups. To support the provision of safe and high-quality healthcare, patient safety must remain a priority in acute care settings. The aim is to highlight relevant recent evidence on the association between pandemic-induced burnout and important patient safety metrics, to specify potential mechanisms, and to reflect on factors that shape these relationships in acute care hospitals.

Research addressing medical errors and near misses, aspects of safety climate, and licensing body reports suggests that acute care staff burnout is associated with increased safety failures. A systematic review found that for nursing staff, statistically significant relationships existed for 13 of 17 safety-related outcomes, and that effects were larger for cognitive than for non-cognitive errors. Three mechanisms appear to link burnout with safety failures: increased cognitive load that undermines decision-making, impaired teamwork within and between care phases, and reduced supervision and oversight. Although the focus is on acute care hospitals, evidence and arguments apply to other health services where staff burnout, and its consequences for patient safety, are important.As these burnout dimensions are reliably linked to medical errors, adverse events, safety culture, and reporting behaviors, the observed escalation places the safety of patients at risk. The challenge now is to discern the future trajectory of current burnout levels and their eventual impact on patient safety and quality metrics.

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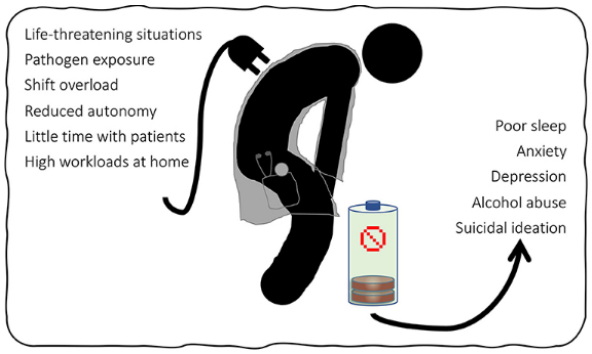

Fig 1: Burnout Among Healthcare Workers in the COVID 19 Era

1.1. Background and Significance

Burnout is now acknowledged as "one of the most pressing issues facing healthcare organizations." Data collected early in the COVID-19 pandemic show that burnout very likely increased in nurses, physicians, and other hospital personnel. Burnout is closely related to patient safety and quality in acute care environments; the challenge now is to understand how pandemic-induced increases in burnout will ultimately affect patient safety and quality. Organizations in the high-risk acute care environment must proactively monitor and address this well-known threat to patients if trends in safety and quality metrics are to be mitigated or reversed.

Extant data suggest a recent spike in burnout among all categories of hospital personnel, with support/service staff, nursing, and physician burnout all notably elevated. Recent data also indicate elevated rates of emotional exhaustion, depersonalization, and decreased personal accomplishment among nursing consultants.; in physicians, increases in emotional exhaustion and depersonalization are mirrored by decreased professional fulfillment.

Equation 1: Define the variables the paper uses (turning words into math)

Let a worker i answer a set of questionnaire items.

- Emotional Exhaustion items: $x_{i1}^{(EE)}, x_{i2}^{(EE)}, \dots, x_{im}^{(EE)}$
- Depersonalization items: $x_{i1}^{(DP)}, \dots, x_{in}^{(DP)}$
- Personal Accomplishment items: $x_{i1}^{(PA)}, \dots, x_{ip}^{(PA)}$

Step-by-step subscale score

1. Sum items:

$$EE_i = \sum_{k=1}^{m} x_{ik}^{(EE)}, \quad DP_i = \sum_{k=1}^{n} x_{ik}^{(DP)}, \quad PA_i = \sum_{k=1}^{p} x_{ik}^{(PA)}$$

2. Some analyses use "reduced accomplishment", so define:

$$rPA_i = -PA_i \quad \text{(or equivalently } rPA_i = PA_{\max} - PA_i\text{)}$$

If you want one burnout scalar:

1. Compute mean and SD across staff:

$$\mu_{EE}, \sigma_{EE}, \ \mu_{DP}, \sigma_{DP}, \ \mu_{rPA}, \sigma_{rPA}$$

2. Convert to z-scores:

$$zEE_i = \frac{EE_i - \mu_{EE}}{\sigma_{EE}}, \ zDP_i = \frac{DP_i - \mu_{DP}}{\sigma_{DP}}, \ zrPA_i = \frac{rPA_i - \mu_{rPA}}{\sigma_{rPA}}$$

3. Combine (weights can be equal if not specified):

$$B_i = \frac{zEE_i + zDP_i + zrPA_i}{3}$$

This matches the paper's idea of burnout as a **multi-component construct** that can be measured individually and aggregated .

2. Conceptual Framework and Definitions

Four concepts clarify the synthesis's focus on workforce burnout and associated patient safety outcomes. Burnout encompasses emotional exhaustion, depersonalization, and reduced personal accomplishment, all measured for individuals and aggregated by role or organization. Patient

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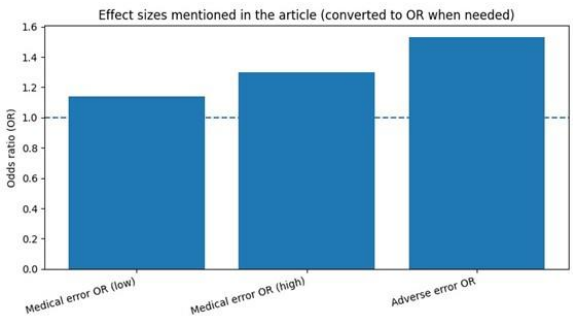
safety entails prevention of adverse events, encompassing incidents caused by act of omission or commission. Two theoretical models—demand-resource and effort-reward—illustrate burnout emergence, propensity to pursue risky short-cuts, and cognitive limitations detrimental to patient safety. The synthesis examines direct and indirect empirical relationships between burnout and safety measures, including a range of safety failures.

Burnout's definition integrates three components: emotional exhaustion; depersonalization or an impersonal, unfeeling response to those served; and diminished personal accomplishment. It operates at the individual and group level, with research interest in individual roles (e.g., physicians, nurses, radiologists) and aggregated impacts. Emotional exhaustion—consisting of tiredness, demotivation, sense of being overextended—is also the most widely used burnout dimension, proxied by single-item relative assessments of a respondent's burnout compared to "most people." Distinct from stress, which may spur positive responses, burnout denotes "a prolonged response to chronic interpersonal stressors on the job." Correspondingly, burnout is highest in clinical workers routinely exposed to suffering and death; those engaged in high-stakes decision-making; residents; those experiencing disproportionate work burden; and providers directly treating COVID-19 patients.



2.1. Research design

An integrative synthesis of diverse literature identified sources of pandemic-related burnout and linked it to patient safety. The analysis drew upon longitudinal and cross-sectional cohort studies, surveys of healthcare staff, meta-analyses, and a broad range of other secondary sources, focusing on acute-care hospitals and healthcare personnel involved in direct patient care. The key temporal dimension for the analysis was thus the course of the COVID-19 pandemic and the major crises experienced in a significant number of countries.

Research by Lindgren et al. established a decline in safety climate, including diminished perceptions of staff mental health (i.e., reductions in burnout), and identified associations of mental and physical health with safety climate. Mental health in the study was assessed through statements regarding stress and burnout—factors known to be associated with safety outcomes and recently classified as predictors of patient safety.

3. Pandemic-Induced Burnout: Evidence and Trajectories

Studies consistently show that pandemic-related burnout prevalence has increased significantly within multiple healthcare cohorts, disciplines, geographic regions, and phases of the pandemic, making it a relevant area of focus. Patterns observed over time within nurse and physician samples may serve as useful indicators for other groups. Burnout prevalence among healthcare support staff also merits attention, as staffing gaps may be filled by employees in early or newly-appointed roles. Longitudinal data reveal a troubling three-year trajectory of increasing depersonalization among a sample of physicians and advanced practice clinicians.

Six key drivers of burnout, specific to acute care settings, have been identified: increased workload; staffing shortages; moral distress from the inability to provide adequate care and support; risk of exposure to COVID-19; the burdens of complying with infection control policies and procedures; and the administrative workload associated with these demands. Burnout has been measured with a range of assessment tools, enabling both direct evaluation and the use

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of indirect proxies, although reliability and validity must be assessed for each dataset. Careful consideration of cross-study comparability is therefore warranted, especially when considering predictors, moderators, and effects associated with the constructs.

3.1. Causes and Contributors in Acute Care Settings

Workload escalation, inadequate staffing, moral distress, exposure risk, administrative burden, and crisis leadership pressures all play a role in acute care settings. The growing demands on hospital bed space and workforce have escalated patient loads and created pervasive moral distress and ethical strain across roles. Individual behavior changes, including avoidance of patient interactions and willingness to care for designated cohorts, underscore the anticipated risk of exposure to COVID-19 among healthcare personnel, alongside the direct physical impact on staff through severe illness. Staffing shortages arising since the onset of the pandemic have been noted in all previous waves, driven by increased demand due to COVID-19 and indirectly by excessive workloads, burnout, leave-of-absence or retirement decisions, and diminished recruiting and training capabilities. Evidence suggests that pandemic infrastructure and procedures in acute care have created additional non-treatment tasks and burdens that can negatively affect patient care, as well as higher infection-control operational costs and substantially modified treatment pathways. Leadership communications and decision-making have been the focus of partner engagement, information sharing, and coordinated commissioning and direction from whole-system leaders. Crisis leadership during a time of acute stress can also negatively impact the well-being of team leaders and members.

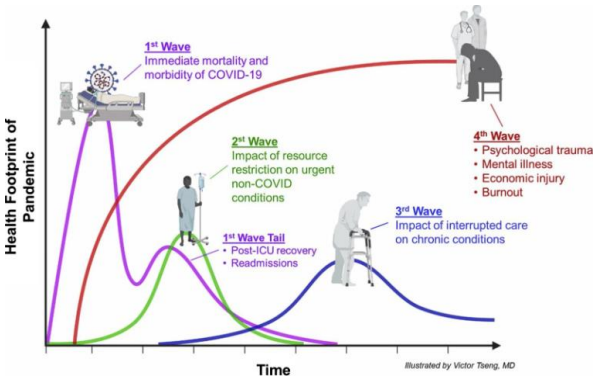

Fig 2: The COVID-19 pandemic presents an opportunity to develop more sustainable health workforces

3.2. Measurement and Indicators of Burnout

The Maslach Burnout Inventory is the most validated tool for measuring the multisymptom construct of burnout. Information about the different burnout dimensions can also be obtained using single-item measures such as the Wong-Baker FACES Pain Rating Scale. Since the Maslach Burnout Inventory's length can hinder its use in larger studies, proxies such as single-item measures of emotional exhaustion or redundancy are often employed. Empirical evidence supports the use of a single item assessing emotional exhaustion to measure its effect on surgical nursing patients. Single-item measures of emotional exhaustion contained in the QPS Nordic and NHS staff surveys have also been associated with clinically relevant consequences in nursing. The single-item measure extracted from the Wong-Baker FACES Pain Rating Scale has been found, however, less reliable than longer measures of emotional exhaustion and depersonalisation. Nevertheless, evidence suggests the use of proxies for emotional exhaustion-related concepts and for reduced personal accomplishment.

Burnout as defined in Maslach's framework has been associated with safety outcomes in multiple studies across multiple populations and work settings. Vulnerable populations such as women and support staff have been

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found differentially affected. Support staff have reported significantly higher rates of emotional exhaustion than nurses and physicians, suggesting that heavy workloads, loss of support from nurses and patients, increased exposure to conflict in the workplace, and fear of contracting COVID-19 have taken a substantial toll on this group. Key dimensions of Maslach's burnout framework have also been examined across several studies.

Equation 2: Model the burnout → patient safety link (the paper's key relationship)

Let:

- $Y_i = 1$ if worker i reports (or is associated with) ≥1 error/adverse event in a period, else 0.
- B_i burnout index (or use EE and DP separately)

Step-by-step logistic model

2. Start with odds:

$$\text{Odds}(Y_i = 1) = \frac{P(Y_i = 1)}{1 - P(Y_i = 1)}$$

3. Log-odds is linear:

$$\log\left(\frac{P(Y_i = 1)}{1 - P(Y_i = 1)}\right) = \beta_0 + \beta_1 B_i + \beta_2 X_i$$

where X_i are controls (role, unit type, staffing ratios, shift length, etc.).

4. Solve for probability:

$$P(Y_i = 1) = \frac{1}{1 + \exp[-(\beta_0 + \beta_1 B_i + \beta_2 X_i)]}$$

4. Interpret β_1 via odds ratio (OR):

$$OR = \exp(\beta_1)$$

- If $OR = 1.30$, that's **30% increased odds** (because $1.30 - 1 = 0.30$).

The paper states: **"14–30% increased odds of committing a medical error"** for EE/DP .

Step-by-step conversion

3. "Increased odds by q%" means:

$$OR = 1 + \frac{q}{100}$$

4. So:

- $q = 14 \Rightarrow OR = 1.14$
- $q = 30 \Rightarrow OR = 1.30$

The paper also states **"1.53-times greater likelihood of adverse error commission"** which is typically treated as:

$$OR \approx 1.53$$

4. Patient Safety Outcomes Associated with Burnout

Recent studies demonstrate associations between burnout and a variety of patient safety metrics, including medical errors, adverse events, and safety culture characteristics. Although causal links are difficult to establish and effect sizes are rarely quantified, the balance of evidence supports a connection between burnout and safety failures. Compromised situational awareness, impaired cognitive processing, diminished team dynamics, and heightened conflict are processes associated with burnout that are plausible precursors to safety lapses.

Burnout is related to numerous patient safety outcomes, with the best-documented links to medical errors and adverse events. Studies suggest that burnout is associated with increased risk of reported medical errors, any documented adverse event during hospitalization, clinician-reported adverse events attributed to the other team, and patient-reported serious harm. However, few of these studies quantify effect sizes, in part due to the difficulty of controlling for confounding factors in observational designs.

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Although associations have been detected across multiple care settings and clinician roles, the quality of the effect estimates has been described as insufficient to be relied upon in practice, policy, or research. One recent meta-analysis found no evidence of an association between burnout and patient safety outcomes in obstetric settings.

4.1. Medical Errors and Adverse Events

Burnout is linked to the occurrence of medical errors as well as broader categories of adverse events, including sentinel incidents. Though the types of errors considered vary across studies, a consistent negative relationship has been found. A systematic review reported a 14–30% increased odds of committing a medical error associated with the emotional exhaustion and depersonalization dimensions of burnout. The link was particularly strong for physicians, but the authors noted that most studies relied on a single burnout scale with low reliability. Nursing and pharmacy perspectives supported an association between burnout and increased error likelihood, and a small cohort of critical care nurses reported both direct and indirect pathways.

Deteriorating physical and mental health and increased levels of substance use during the pandemic were cited as contributing factors to frequent medication errors in a study of hospital pharmacists in a highly impacted region of China. Major injuries including, but not limited to, medication errors, patient falls, and patient suicide were reported at higher rates among nurses with higher levels of emotional exhaustion and depersonalization, with differences persisting after adjustment for other work-related stressors. A cross-sectional study of nurses in critical care and emergency departments found a 1.53-times greater likelihood of adverse error commission during the pandemic for those with high emotional exhaustion relative to lower levels.

Equation 3: Model safety culture and reporting behavior (also discussed in the paper)

Let SC_u be a safety climate score for unit u.

A basic linear model:

$$SC_u = \alpha_0 + \alpha_1 \overline{DP}_u + \alpha_2 \overline{EE}_u + \alpha_3 Z_u + \epsilon_u$$

- $\overline{DP}_u$ is average depersonalization on the unit
- Z_u unit covariates (staffing ratio, patient acuity, leadership support)

3.2 Reporting willingness as a Bernoulli probability

Let $R_i = 1$ if worker i reports an observed error.

The article provides a proportion:

- $P(R = 1) \approx \frac{1}{3}$

If you want a burnout-sensitive model:

$$P(R_i = 1) = \frac{1}{1 + \exp[-(\gamma_0 + \gamma_1 B_i + \gamma_2 W_i)]}$$

Typically you'd expect $\gamma_1 < 0$ if burnout reduces reporting, consistent with the narrative on underreporting .

4.2. Safety Culture and Reporting Behaviors

Safety climate, particularly among nursing staff, is negatively correlated with depersonalization, and safety culture is positively related to feelings of reduced personal accomplishment. Overloaded nursing units experience cluster underreporting of medical errors. Laboratory errors in transfusion medicine increase with emotional exhaustion and depersonalization. Nurses testify that pandemic working conditions hindered their ability to provide safe and effective care, and only one-third are willing to report an error when observed. Among residents and fellows, burnout fosters greater underreporting of near misses and delicate errors. The likelihood of excluding family members from discussions of patient care diminishes with perceptions of a negative safety culture. Essential Functions during COVID-19 Outbreak and Perception of Crisis Leadership can predict a longer period required before clinicians will feel comfortable fully disclosing errors or near misses to patients.

A disrupted safety culture in a hospital may lead to impaired communication and decision-making processes between staff, resulting in increased complications, errors, and

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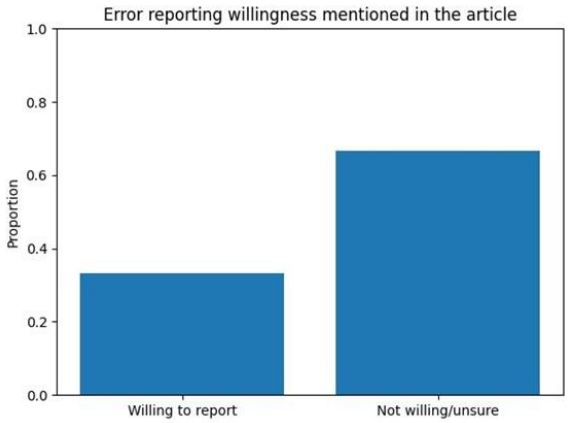
deaths. These conditions can be expressed by a new construction referred to as the toxic triad: a pattern of shared beliefs in a work unit that is negatively associated with psychological safety and the reporting of near-miss incidents. Greater cognitive load resulting from exhausting working conditions, higher incident response circumstances, increased physical fatigue, more traumatic experiences, and lower levels of safety climate perception are all factors that lead to an increase in cognitive fatigue. Strong evidence supports that a high degree of cognitive fatigue is associated with reduced workload, lower response accuracy, and slower response time, and is a strong predictor of unsafe behaviors among operational personnel.



5. Mechanisms Linking Burnout to Safety Failures

Cognitive load is widely recognized as a key determinant of decision-making quality. When cognitive resources are depleted, lapses in attention are more frequent, processing is slower and relies more on familiarity than careful consideration. Evidence indicates that working under conditions of high workload or fatigue can lead to a greater reliance on heuristics and familiarity, a higher incidence of errors of omission, and more mistakes.

Teams operating in a state of burnout also exhibit changes in dynamics. More experienced team members may be less inclined to monitor performance and may work more in parallel than in sequence, with reduced scrutiny of each other's actions. Clinician attitudes have changed as a result of the pandemic, with people communicating less and feelings of frustration and blame between teams increasing. De-escalation of conflict may take longer. Such trends are likely to be especially damaging during handovers and vital sign checks.

Equation 4: Mechanism equations (formalizing "how" burnout leads to safety failures)

Let:

- CL_i = cognitive load / cognitive fatigue score
- Y_i = error occurrence

Step-by-step

4. Burnout predicting cognitive load:

$$CL_i = a_0 + a_1 B_i + a_2 X_i + \eta_i$$

5. Cognitive load predicting errors (logistic):

$$\log\left(\frac{P(Y_i = 1)}{1 - P(Y_i = 1)}\right) = c_0 + c_1 B_i + c_2 CL_i + c_3 X_i$$

5. Indirect (mediated) effect (approx.):

$$\text{Indirect} \approx a_1 \cdot c_2$$

5. Direct effect:

$$\text{Direct} \approx c_1$$

Analogous equations can be written for teamwork quality T_i or supervision S_i as mediators.

5.1. Cognitive Load and decision-making

Increased cognitive load depletes decision-making resources. With high brain activity, decision-making capacity is compromised, resulting in a reduced ability to find

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appropriate answers. Specifically, a high cognitive load superimposes a growing burden on the working memory, shifting the recruitment of available tasks toward a more economic/exhaustive decision-making mode or simple heuristic. Under stress, automatic processes take over and heuristic shortcuts become apparent. The use of shortcuts can be considered a beneficial adjustment to stress as it allows for prompt decisions, but inaccurate or incomplete input to these shortcuts leads to erroneous decisions. At the choice level, lapses in attention are observed, making actors prone to oversights. These lapses lead to extra time spent processing choice information in particular. On the contrary, under stress, attention is given to a narrow span of information, while others go unnoticed, supporting patterns of speeding and the use of heuristics to resolve choices in adequate time.

Decision-making plays a central role in guaranteeing safety in the healthcare system. The consequences of medical errors may be critical for patients. Attention is also required in communication: proper answers and optimal information management within the team. Without it, errors of content and timing in the handoff, great difficulty in escalating problems, and conflict and tension among operators are usual. This requires communication and team involvement, which survives stress in joint situations and in limited periods, but can be impaired in more prolonged interactions. Pandemic-related decision-making overload hence plays a major role in the safety of the healthcare system.

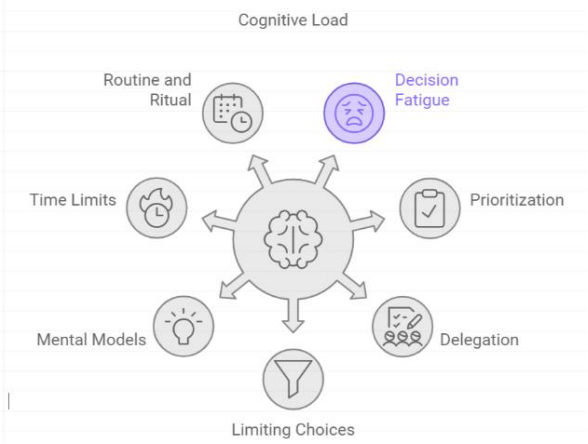

Fig 3: Cognitive Load in Decision-Making

5.2. Team Dynamics and Communication Breakdowns

Burnout among hospital personnel disrupts collaborative efforts, which are crucial for maintaining safety through information handoffs and coverage of core medical services. Cognitive load reductions associated with task rotation have been linked to declines in safety-reporting behaviors such as near-miss reporting among freight pilots; analogous effects may occur when acute care staff experience prolonged periods of role-based intensity.

Teamwork fatigue increases the risk of mishaps that require effective communication for resolution, including incorrect anesthesia-site incidents, intraoperative patient-positioning errors, delay-related surgical adverse events, and medication errors arising from shift failures in patient transfer discussions. When proactive escalation of concerns is undermined by depersonalization, the potential for diagnostic oversight rises.

6. Contextual Factors in Acute Care Hospitals

Six contextual factors shape the impact of burnout on patient safety within acute care hospitals: type (private, public,

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academic, community), pandemic location (surge stressors, governmental response speed), and crisis duration; specific pandemic-induced stressors; organization-specific supports; and resource scarcity. Analysis focuses on hospitals, but the U-shaped relationship highlights specialists as more vulnerable than generalists. Generalizability onto other healthcare settings and socially related professions requires caution, as does the inclusion of mid- and long-Covid effects; where absence is not detrimental to safety performance, presence may be.

Although high workload is commonly associated with burnout, opposite patterns have surfaced during the pandemic. These deviations result from a combination of increased demand and a decrease in the availability of experienced staff; as attendance decelerated people moved to other sectors; the risk of contraction has also increased with the increasing number of variants and subvariants. It is precisely this combination of higher demand and lower available experience that determines the request for mental health leave. High demand could however be "buffered" by sufficient availability of experienced workers, whose help and support could resolve and help mitigate these weakest moments; however, when the availability of these resources decreased, the demand remained constant or even increased; those who remained suffered increased moral distress from working without the support of those who had already passed through the first wave of the pandemic and had experienced it first-hand.

6.1. Pandemic-Specific Stressors

The acute care hospital context is generally acknowledged to be particularly vulnerable to burnout-associated patient safety failures. The pandemic magnified this vulnerability in several important ways. Surge demand, which is common to all pandemics, placed an intense strain on staff and resources. Sustained exposure to infectious patients and the associated infection control measures—including restrictive visitor policies, use of PPE, and mandatory isolation for staff members—added to physical and emotional discomfort. So too did the increasingly exacting public health measures required to contain the virus. Yet, development and implementation of policies such as those governing PPE use were often excessively compressed, creating further discomfort and uncertainty. The patient experience was likewise affected: during hospitalization, health care service quality declined, and feelings of stress and anxiety increased. Upon discharge, patients were less ready for discharge than would otherwise have been expected, rating the continuity of care and provision of discharge information less favorably. Changes to public health measures that required surfacing hotspot health units were further described as distressing.

Crisis leadership is often cited as a vital characteristic necessary to facilitate leadership effectiveness and mitigate crisis-related risk. Important staffing resilience strategies—supported education, suspended staff rotations, and the introduction of non-care roles for retired staff—were also employed. Downtime, counselling programs, and communication with leaders through multiple diverse channels were described as important organizational resources. Resource availability was critical, especially in terms of adequate staffing, both at the unit level and system wide, along with the provision of dedicated mental health support and the reinforcement of internal peer-support networks. Post-crisis debriefs to promote team bonding and mental health and to address learned lessons were also highlighted.

Equation 5: Tables and graphs (from the article's explicit numeric statements)

The following numeric values are stated in the article and were converted to standard effect sizes:

- **14–30% increased odds** of medical error (EE/DP)
- **1.53×** greater likelihood of adverse error commission (high EE)
- **Only one-third willing** to report an observed error

(These are what the charts below visualize.)

I generated:

- A **bar chart of odds ratios** (OR 1.14, 1.30, 1.53)

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- A **bar chart of reporting willingness** (1/3 vs 2/3)

These charts are **not new data**—they are just a clean visualization of the article's stated values.

6.2. Organizational supports and Resource Availability

In the acute care setting, maintaining a strong workforce is critical. Beyond short-term availability (see 3.2 Posture of Role-Specific Burnout), the protracted nature of the crisis has raised considerable concern that chronic strain and exhaustion are engendering long-term attrition through burnout (see 3.1 Causes and Contributors in Acute Care Settings). Supporting resource availability, including operational resilience during times of acute demand and ensuring staff self-care and well-being, has therefore been a priority for most acute care systems during the pandemic, and considered essential for sustaining delivery system capability by many observers. A variety of evidence rolls up into these supportive domains, their importance accentuated during epidemiological surges in patient demand for care.

In addition to formal staffing initiatives (see 3.1 Causes and Contributors in Acute Care Settings), organizational and administrative actions directed to promote wellness have included mental health support programs, peer support or critical incident stress debriefing, and enhanced communication from leadership to staff throughout the pandemic. There is some evidence suggesting these investments may have positively influenced the mental well-being of on-duty personnel; further, they may also have contributed to more effective crisis management through staff feeling supported, and therefore better able to manage increased workloads, higher demands, and service process changes. While effects on risk-taking, burnout symptomatology, and workforce performance remain less clear, greater understanding of these initiatives' impact on the ability to support functioning and resilience of the clinical service other than at points of peak demand remains of key interest.

7. Conclusion

These findings indicate a considerable short-term decline in the safety of care provided in acute care hospitals since the onset of the COVID-19 pandemic. Workforce burnout is a plausible explanation for this deterioration and is largely rooted in the escalation of stressors associated with the surges in demand for healthcare services. Several of these stressors are unique to the pandemic and will likely abate over time, though in their absence, other difficulties common to health care—such as staffing shortages and shifts—are expected to persist. Burnout is also linked with a higher level of regrettable errors and may have contributed to the devastating consequences of institutional sex abuse.

Burnout in health-system workers is thus an emergent risk that, if unaddressed, has the potential to hinder the recovery of key quality and safety metrics. Stakeholders are encouraged to monitor workforce burnout and to adopt organizational dynamics and governance provisions that promote psychological resilience and health-system recovery. The only major category of operational metric expected to improve is patient satisfaction. Alas, current experience would suggest that this improvement may simply reflect the near-elimination of patient-centered care for the duration of a health-system crisis.

7.1. Emerging Trends

Pandemic-Altered Workload and Workforce Impact on Safety Culture and Quality Outcomes Post-COVID Burnout Return and Recovery

Emerging trends include upcoming waves of diminished patient safety and quality within acute care hospitals as pandemic-induced workforce burnout deteriorates and subsequently recedes. Early recovery transitions—generally anticipated for 2022—may have yet to fully materialize for many healthcare workers. Recent indications of yet another phase of burnout escalation among healthcare workers in the months preceding this writing underscore the need for continued vigilance while monitoring recovery.

Sustained damage to safety culture and quality outcomes may become visible once the wave of pandemic-related

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burnout recedes. Although reductions in nurse burnout were correlated with improvements in safety climate within a large acute care hospital during Fall 2021, it remains unclear whether subsequent gains in safety culture signals and quality measures will prove durable across formalized system levels. Evidence continues to mount in support of both the relationship between burnout and patient safety and the links between other types of operational crisis-induced burnout within acute care settings and declines in safety culture and quality outcomes.

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