

Hospital Extended Shifts: A Patient Safety Crisis

Opinion by Bill Smith © all rights reserved. January 2025

After a devastating medical malpractice loss, putting an end to hospital harm became a case of "necessity being the mother of invention." My heartbreaking experience spawned a solution that can prevent medical errors—errors like those that took the life of my beloved son, Zander. He was only 20, and on the brink of greeting the world's challenges with his heart filled with excitement. My journey to improve healthcare safety began a shortly fter last Christmas when Zander took his last breath. Now, little more than a year later, I believe my innovative approach that combines legal requirements, patient rights, and healthcare worker safety is groundbreaking, easily implemented and powerfully effective. It begins here:

Key Research Findings Recent studies demonstrate the mostly hidden dangers of very demanding hospital work shifts of 12+ hour. A detailed analysis is provided in Appendix A, but summarize the research shows:

1. Error Rates Climb with Cognitive Decline, by Percentage

- There is a 25-30% decline in cognitive function by hour 8 (already at the threshold of patient harm)
- Then a 40-50% decline during hours 10-12 (time intensive crisis will likely be mishandled)
- 300% increase in medical errors after 12.5 hours [Source: Journal of Occupational Health, 2024] (an opportunity for a harmful or deadly outcome)

2. Patient Safety Impact With over 250,000 lives lost annually to preventable medical errors [Source: BMJ Medicine, 2024], the data reveals that cognitive decline takes its toll in:

- Medication errors increase by 250% after 8 hours
- Decision-making capability decreases by 35% during extended shifts
- Patient mortality increases by 6% for every hour after 8-hour shifts [Sources: American Journal of Critical Care, BMJ Quality & Safety, JAMA Internal Medicine, 2024]

Legal Framework As detailed in Appendix B, our approach builds on established legal precedents. Similar to tobacco warning requirements [Philip Morris USA v. Williams, 549 U.S. 346 (2007)], hospitals are required to disclose known risks to patients. Current practice hides shift-related errors 100% of the time. This violates informed consent principles by:

1. Failing to warn of documented risks (known risks as discussed in Appendix C)
2. Creating known dangerous conditions (an entire staff reaches the "sluggish stage" at the same time patients, whose survival depends on care from alert and energetic staff)
3. Prioritizing profits over patient safety (the most common reason for the lack of patient safety)
4. Showing deliberate indifference to patient safety (hiding harm, like a scorpion under a rock)

Implementation Strategy Drawing from proven healthcare optimization strategies (See Appendix C for detailed implementation guidelines), including those outlined in Navy Bob's acclaimed works "Beyond the Sea" and "High-Reliability Healthcare," this approach balances immediate safety improvements with practical, sustainable implementation.

Financial Considerations Organizations like Patients For Patient Safety (PFPS-US), the US action arm of The World Health Organization (WHO), have demonstrated that streamlined operations can enhance safety. Better patient and financial outcomes naturally follow. As documented in Appendix C, additional insights from Navy Bob's works show how military precision models can transform healthcare operations while improving both safety and financial outcomes.

Proposed Warning Requirement



PATIENT SAFETY NOTICE

You are receiving care during an extended shift period.

Research shows:

Healthcare worker performance declines up to 50% after 8 hours
Error rates increase significantly during extended shifts
Decision-making capability is measurably impaired

As a patient, you have the right to:

1. Know your provider's shift duration
2. Request care during early shift hours
3. Delay non-emergency procedures until next shift.

Please contact the on duty Hospital Administrator if you wish to make a change according to this notice.

Implementation Through Informed Consent

This warning requirement serves two crucial purposes:

1. Informs patients of documented risks during extended shifts
2. Provides hospitals an opportunity to demonstrate their commitment to transparency and patient safety

Forward-thinking hospitals implementing these warnings will:

- Demonstrate leadership in patient safety
- Build trust through transparency
- Show commitment to evidence-based practices
- Lead healthcare industry reform

Sample Letter to Healthcare Leaders, Lawmakers and Local Hospital Administrators:

Subject: Patient Safety - Extended Shift Warning Implementation

Dear [Hospital Administrator],

As a concerned community member, I'm writing to inquire about your hospital's policies regarding extended shifts and patient safety warnings. Research shows significant increases in medical errors during extended shifts. Would your facility consider implementing patient safety warnings about these known risks?

I look forward to your response regarding this important patient safety initiative.

**Best regards,
[Your name]**

Take Action Now Your support can help make healthcare safer for everyone. Here's how you can help:

1. Stay Informed

- Join our mailing list for updates on this initiative [mailto:Admin@YesGFA.org/Mail_list]
- Follow our progress as we work to implement these safety measures
- Learn about hospitals adopting these warnings

2. Spread Awareness

- Share this article with friends and family
- Discuss these safety concerns with your healthcare providers
- Post about this initiative on social media referring this action at #ZandersLaw

3. Make Your Voice Heard

- Ask your local hospitals about their shift policies
- Request this warning during admission procedures
- Support hospitals that prioritize patient safety
- Send us feedback about hospitals' responses
- Share your own healthcare safety stories

4. Join the Broader Patient Safety Movement

As a Champion Member of Patients For Patient Safety (PFPS-US), the US action arm of The World Health Organization (WHO), I've witnessed their significant contributions to patient

safety. PFPS-US continues to make important progress in healthcare safety across the US and globally. I encourage you to join and support their efforts, including participation in events like Patient Safety Day in Washington, DC, which honors those who have lost their lives to medical errors.

A Call for Urgent Change The evidence presented here and detailed in the appendices reveals a clear path toward eliminating preventable medical errors. This straightforward solution offers immediate impact because every life saved matters. As the father of a son who lost his life at just 20 years old due to medical error, clearly preventable, I am passionate about preventing other families from experiencing this devastating, lifelong grief. The evidence is compelling, the implementation is practical, and the opportunity to save lives begins now.

I invite you to join in this vital mission to transform patient safety. By working together, we can create meaningful change that protects patients and supports healthcare providers in delivering the safest possible care. Your engagement in this initiative could help ensure that no other parent has to endure the grief that our family has experienced.

APPENDIX A

THIS PART BELOW CAN BE AN APPENCIX FOR REFERENCE

AT A GLANCE

NURSING ERRORS DURING EXTENDED SHIFTS

4. Cognitive Function Decline

- Baseline (first 4 hours): Normal cognitive function
- Hours 4-6: 10-15% decline
- By hour 8: 25-30% decline
- Hours 10-12: 40-50% decline
- After 12.5 hours: 300% increase in errors [Source: Journal of Occupational Health, "Cognitive Performance Curves in Healthcare Settings" 2024]

2. Documentation Errors

- Baseline: 1% error rate in manual data entry
- After 8 hours: 2.5% error rate (150% increase)
- Types: Missing information, incorrect data entry, wrong patient records [Source: Journal of Healthcare Quality, 2024]

3. Medication Administration

- Baseline: 2.3 errors per 1000 doses
- After 8 hours: 5.75 errors per 1000 doses (250% increase)
- Types: Wrong dose, wrong timing, wrong patient [Source: American Journal of Critical Care, 2024]

4. Clinical Decision Making

Baseline: 95% accuracy rate

After 8 hours: Decreases by 35%

Types: Delayed responses, incorrect prioritization, missed protocols [Source: BMJ Quality & Safety, 2024]

• Clinical Assessment Errors

- ◆ 40% slower response times to patient deterioration
- ◆ 55% increase in missed vital sign changes
- ◆ 70% increase in delayed interventions [Source: Journal of Patient Safety, 2024]

PHYSICIAN ERRORS DURING EXTENDED SHIFTS

2. Cognitive Function Decline

- Baseline (first 4 hours): Normal cognitive function
- Hours 4-6: 15-20% decline
- By hour 8: 30-35% decline
- Hours 10-12: 45-55% decline
- After 12.5 hours: 300% increase in errors [Source: New England Journal of Medicine, "Physician Performance During Extended Shifts," 2024]

3. Diagnostic Errors

- Baseline: 4% error rate in first 8 hours
- After 8 hours: 12% error rate (200% increase)
- Types: Missed diagnoses, delayed diagnoses, incorrect interpretations [Source: JAMA Internal Medicine, "Diagnostic Accuracy in Extended Shifts," 2024]

4. Procedural Errors

- Baseline: 1.2 errors per 100 procedures
- After 8 hours: 3.6 errors per 100 procedures (200% increase)
- Types: Technical errors, wrong-site procedures, equipment misuse [Source: Journal of Surgery, "Impact of Fatigue on Surgical Performance," 2024]

5. Clinical Decision Making

- Baseline: 97% accuracy rate
- After 8 hours: Decreases by 35%
- Types: Treatment plan errors, medication ordering errors, test interpretation errors [Source: BMJ Quality & Safety, 2024]

1. Critical Thinking/Judgment

- 45% increase in risk assessment errors
- 60% increase in complex decision-making errors
- 75% increase in emergency response errors [Source: Journal of Patient Safety, "Physician Cognitive Performance," 2024]

Note 1: The Joint Commission Journal on Patient Safety (2024) reports approximately **50% of medical errors go unreported**, suggesting actual error rates may be significantly higher.

Note 2: Patient mortality increases by 6% for every hour after 8-hour shifts [Source: JAMA Internal Medicine, 2024]

APPEENDIX B

Weighted Measurements

While there is considerable research on the impact of **12-hour shifts** versus **8-hour shifts** on various aspects of healthcare, there are very few studies that directly assign a specific **weight** to each attribute (like fatigue, errors, staffing levels, and continuity of care) in relation to **patient outcomes**. However, many studies provide **qualitative insights** or **quantitative data** that can indirectly inform us about the relative importance of these factors. Below are some of the key attributes and how they have been studied in relation to **12-hour shifts**, along with the potential impact on **patient outcomes**:

1. Fatigue and Cognitive Performance

- **Studies and Findings:** Fatigue is one of the most frequently cited negative consequences of extended shifts. A study in **JAMA Surgery (2015)** found that surgical residents working longer shifts showed a higher likelihood of **cognitive errors**, particularly during the later hours of a shift. Fatigue can impair **attention**, **decision-making**, and **reaction times**, all of which directly affect patient safety and outcomes. The **American College of Surgeons** has cited fatigue as a critical factor in **preventable medical errors**.
- **Weight on Patient Outcomes:** Fatigue-related errors (e.g., medication mistakes, missed diagnoses) are likely one of the most important factors affecting patient outcomes, particularly during **12-hour shifts**. A study in **BMJ Quality & Safety (2016)** attributed **fatigue** as a major cause of **adverse events** and noted that fatigued workers tend to exhibit a higher **rate of medical errors**, directly affecting patient outcomes.
- **Relative Weight:** Based on the studies, fatigue likely plays a **high-impact role** in the context of **12-hour shifts**, especially in high-stakes environments (e.g., surgery, ICU). The cognitive decline toward the end of a 12-hour shift increases the risk of errors, making fatigue an attribute that weighs heavily on **patient outcomes**.

2. Clinical Judgment and Decision-Making

- **Studies and Findings:** A study published in the **Journal of Patient Safety (2015)** found that longer shifts were correlated with **poorer clinical judgment**, especially in the **critical decision-making moments** during treatment. The research suggested that longer shifts negatively impacted the **ability to make timely and accurate decisions**, which could delay treatment and result in worse outcomes for patients.
- **Weight on Patient Outcomes:** The ability to make quick, informed decisions is crucial for **patient safety**, especially in fast-paced areas like the **ER** or **surgery**. The deterioration of clinical judgment can significantly affect patient care, making it a major factor in **patient outcomes** when working extended shifts. **12-hour shifts** contribute to **decision fatigue**, which can make healthcare workers more prone to **oversights** or delayed interventions.
- **Relative Weight:** Like fatigue, **clinical judgment** and decision-making are highly significant. In the context of **patient outcomes**, this factor could be considered as a **high-impact** attribute when comparing **12-hour** and **8-hour shifts**.

3. Staffing Levels and Team Coordination

1. **Studies and Findings:** Longer shifts can help **ensure continuity** of care, particularly in **ICU settings**, where complex patient needs require sustained attention. However, there is evidence from studies like those in **Critical Care Medicine (2017)** showing that **inadequate staffing levels** and the **fatigue** of long shifts can lead to issues with **team coordination**, particularly toward the end of the shift, which could **compromise patient care**.
2. **Weight on Patient Outcomes:** Adequate staffing levels are essential to prevent **staff burnout** and ensure effective **teamwork**. Poor coordination due to fatigue or understaffing can result in miscommunication, which is a major cause of medical errors and **delayed treatments**. Hospitals with **better staffing ratios** and **rotation schedules** (to avoid fatigue) likely see better patient outcomes, suggesting that staffing levels and team dynamics weigh heavily on the quality of care.
3. **Relative Weight:** While **staffing** is a key factor, **team coordination** may be slightly less impactful than **fatigue** in terms of directly affecting **individual clinical decisions**. Still, in high-pressure environments like surgery or ICU care, its impact is **substantial**.

4. Infection Control and Clinical Safety

2. **Studies and Findings:** There is also research focused on how longer shifts may impact the risk of **surgical site infections** or other **infections** in hospitalized patients. For instance, a study in the **Journal of the American Medical Association (JAMA, 2016)** suggested that surgical teams working extended shifts may show a slight increase in the **rate of infections**. The fatigue and mental strain involved in longer shifts could affect the **attention to sterility protocols** and the **efficiency of infection control procedures**.
3. **Weight on Patient Outcomes:** **Infection control** is paramount in determining surgical outcomes and preventing complications. Long shifts can lead to lapses in adherence to **sterility protocols** and **infection prevention measures**, resulting in increased patient morbidity. While infection rates are generally low in well-staffed and well-monitored hospital settings, extended shifts can slightly increase infection risk.
4. **Relative Weight:** **Infection control** is a high-stakes factor for patient outcomes, and fatigue-related lapses in protocol adherence can be quite impactful. However, infection risk is somewhat less frequent than other outcomes like decision-making errors, making it a **moderate** but **important factor**.

5. Physical and Mental Health of Healthcare Workers

- **Studies and Findings:** A study in **Nursing Outlook (2019)** found that prolonged 12-hour shifts led to higher levels of **burnout** and **physical health problems** (like back pain, sleep disturbances, and increased stress). The negative health impacts on healthcare workers can affect their performance and, consequently, patient care. Healthcare workers suffering from **burnout** are more likely to make errors, miss important clinical signs, and experience a general decline in their ability to provide high-quality care.
- **Weight on Patient Outcomes:** The mental and physical health of healthcare workers directly affects their **attentiveness**, **work capacity**, and **decision-making ability**, all of which are

integral to **patient safety** and **care quality**. **Burnout** and **stress** have been shown to increase the likelihood of errors, which in turn can lead to **patient harm**.

- **Relative Weight:** While the physical and mental health of workers is important, **fatigue** and its direct impact on **clinical performance** tend to have a more **immediate and measurable effect** on patient outcomes.

Conclusion: Relative Weights of Each Attribute

While it's difficult to assign a precise numerical weight to each of these factors without specific studies that directly compare the impact of each on **patient outcomes**, we can approximate the relative significance based on existing research:

3. **Fatigue (High Impact):** Fatigue is arguably the most significant factor in determining patient outcomes, particularly for errors related to cognitive performance and decision-making.
4. **Clinical Judgment (High Impact):** As decision-making is crucial for timely, appropriate interventions, fatigue-induced degradation in clinical judgment is a critical issue.
5. **Team Coordination and Staffing (Moderate to High Impact):** Effective teamwork and adequate staffing are essential for reducing errors, but their impact is often secondary to individual cognitive errors arising from fatigue.
6. **Infection Control (Moderate Impact):** Lapses in sterility and infection control protocols due to fatigue can lead to complications, but the overall risk of infection remains relatively low in well-managed settings.
7. **Healthcare Worker Health (Moderate Impact):** The physical and mental health of healthcare workers is crucial for long-term performance, but its immediate impact on patient care is often overshadowed by more immediate issues like fatigue and clinical errors.

In summary, fatigue and clinical judgment are likely the highest-weighted factors affecting patient outcomes in the context of 12-hour shifts, with staffing levels and infection control following as important but somewhat secondary considerations.

APPENDIX C

Known, or should be know in the Healthcare environments.

1. Is the Negative Impact of 12-Hour Shifts on Patient Outcomes Common Knowledge in Healthcare?

The **negative effects of 12-hour shifts** on healthcare workers' **fatigue, clinical judgment, and performance** are widely acknowledged within **academic circles** and among **medical professionals**, particularly those working in critical care settings like **surgery, emergency rooms (ER), and intensive care units (ICUs)**. Numerous studies have highlighted the increased risk of **errors, mistakes, and poor decision-making** associated with extended shifts. However, there are a few reasons why this awareness might not yet translate into **uniform policy changes** across the healthcare industry:

- **Resistance to Change:** Some **hospital systems**, especially those that are **overburdened** or face **staffing shortages**, might resist changing shift patterns due to concerns about **costs and operational efficiency**. Healthcare administrators may prioritize **continuity of care** (e.g., minimizing handoffs between staff) and **financial savings** over the well-documented risks of **fatigue**.
- **Varied Priorities:** While there is a growing body of evidence linking fatigue to poorer **patient outcomes**, hospital priorities can differ. In some hospitals, particularly in regions with limited healthcare resources, **staffing shortages** or a **lack of funding** may push administrators to extend shifts or adopt practices that allow for fewer staff members to work longer hours. Additionally, healthcare workers may be inclined to accept long shifts as a way to balance work-life commitments or maximize income (especially for nurses).
- **Limited Enforcement of Evidence-Based Policy:** While studies and clinical research show that **fatigue impacts performance**, policies to restrict shift lengths or mandate more rest periods are often **voluntary guidelines** or **institution-specific decisions**. Some hospitals do not implement strict regulations or shift caps, leaving workers exposed to the potential risks of **long hours**.

So, while **evidence is widely available**, it has not necessarily reached a **unified consensus** on the issue at a policy level, nor has it led to universal changes in **practice** across all hospitals.
