

## NEWSLETTER - JAN 2025

# WELCOME TO SYNAPSE

Dear Friends, Colleagues, and Valued Patients

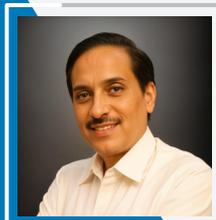
Welcome to Synapse, the inaugural newsletter of NASA Hospitals! I'm delighted to connect with you on this platform and share our journey – one driven by a deep commitment to transforming healthcare. My career in healthcare leadership, working with leading hospital systems, has given me invaluable insights. I've seen firsthand the challenges patients face: the anxiety of delayed diagnoses, the confusion surrounding treatment, the frustration of unclear billing, the struggle for communication, and the burden of high costs. These experiences solidified my calling: to build something different, a healthcare system truly prioritizing the patient experience. That calling is NASA Hospitals. We envisioned a place where specialized care, particularly in neurosciences, spine, orthopedics, and critical care, is not only exceptional but also accessible and affordable. We're not simply building hospitals; we're building a community of care.



**Dr. Riyaj Khan**  
Executive Director,  
NASA Hospitals

We're cultivating an environment where compassionate expertise meets genuine empathy. From our clinical leaders to our support staff, we're fostering a culture of caring. We're investing in our people, attracting top medical professionals, nurturing exceptional nursing, and committing to continuous improvement to ensure the highest quality care and the best possible outcomes for every patient. Synapse is our way of keeping you informed and engaged. We'll share updates, celebrate patient successes, and offer valuable health and wellness insights. Connect with us, share your feedback, and be part of our growth. Thank you for joining the NASA Hospitals family. We're honored to serve you and are committed to providing the care you deserve.

**Dr. RTS Naik**  
Senior Consultant  
Neurosurgeon,  
Editor-in-Chief



## Connecting Minds, Advancing Care

As a neurosurgeon, I'm deeply familiar with the nervous system's intricacies and the human spirit's resilience in facing neurological challenges. I've also witnessed how medical innovation offers hope in seemingly impossible situations. It's with this understanding that I'm thrilled to introduce Synapse, NASA Hospitals' inaugural newsletter. Synapse is more than a publication; it's a vital connection between our medical team, patients, families, and the healthcare community. It signifies our commitment to medical excellence, academic advancement, open communication, and shared understanding. It's a platform for dialogue, knowledge sharing, and a testament to NASA Hospitals' passion and expertise. We will share inspiring patient stories,

showcasing the remarkable human capacity to overcome adversity. At NASA Hospitals, exceptional healthcare rests on three pillars: an exceptional clinical team, compassionate care, and continuous learning. Synapse reflects these values. You'll find stories of our doctors' and nurses' extraordinary work, highlighting their dedication, expertise, and commitment to building trust. We'll explore crucial topics like infection control, debunk healthcare myths, and offer insights into healthcare costs, empowering patients and families. This inaugural issue is just the start. We're committed to making Synapse a valuable resource for everyone interested in medicine. Join us on this journey to improve lives, one patient at a time. We welcome your feedback and contributions. Together, we can make a difference. Welcome to the NASA Hospitals family.

# Can Excess Hemoglobin Cause a Stroke?



Meet **Mrs. Sharma**, a 60-year-old woman who had always enjoyed good health. She had no previous medical history, maintained an active lifestyle with daily walks, and ate a balanced diet. However, one morning, she woke up feeling unusually weak, with numbness on one side of her body and difficulty speaking. Her family rushed her to the hospital, where our critical care team suspected a brain stroke.

The medical team quickly acted, running several tests, and to their surprise, they found that **Mrs. Sharma's hemoglobin levels were abnormally high**. This raised an important question: **Can excess hemoglobin cause a stroke?**

**Dr. Naveen**, Senior Neurologist at **NASA Hospitals**, explained that hemoglobin is a protein in red blood cells responsible for carrying oxygen throughout the body, ensuring tissues like the brain stay well-oxygenated. However, when there's excess hemoglobin — a condition known as **polycythemia** — the blood becomes thicker and more viscous, which can slow circulation. “Thicker blood is more prone to clotting,” Dr. Naveen explained. “If a clot forms and travels to the brain, it can block blood flow, leading to a stroke.”

In Mrs. Sharma's case, the elevated hemoglobin likely caused blood clot formation, resulting in her stroke. But why would someone with no previous medical conditions have high hemoglobin levels?

## Dr. Naveen identified several contributing factors:

- **High Altitude:** Mrs. Sharma had recently moved to a higher altitude. “At high altitudes, the body compensates for lower oxygen levels by producing more red blood cells, which can raise hemoglobin,” Dr. Naveen noted.
- **JAK2 Mutation:** Tests revealed that Mrs. Sharma had a **JAK2 mutation**, a genetic condition that causes the bone marrow to overproduce red blood cells. “The JAK2 V617F mutation is one of the most common causes of polycythemia, and it can lead to increased blood viscosity,” Dr. Naveen explained.
- **Excessive Iron Supplementation:** Lastly, Mrs. Sharma had been self-prescribing iron tablets,



**Dr. Naveen Kumar**  
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Clinical Director-Neurology

believing they would boost her energy. “Excessive iron intake can contribute to polycythemia,” Dr. Naveen cautioned. “Iron supplements can stimulate red blood cell production if taken in excess, leading to higher hemoglobin levels and an increased risk of clotting.”

## How We Managed the Situation

Upon reaching **NASA Hospitals**, the critical care team promptly initiated aggressive treatment to address the elevated hemoglobin and reduce the risk of further clot formation. The first step was **multiple phlebotomy sessions**, which involved removing blood to lower the hemoglobin levels and reduce the viscosity of the blood.

Additionally, **Hydroxyurea**, a medication that reduces red blood cell production, was administered to further control the elevated hemoglobin levels and prevent additional complications. With careful monitoring and management, Mrs. Sharma's condition stabilized, and her stroke symptoms gradually improved. So, can excess hemoglobin cause a stroke? Dr. Naveen confirmed that it **absolutely can**. Whether caused by

environmental factors like high altitude, genetic conditions like the JAK2 mutation, or the overuse of iron tablets, high hemoglobin levels can thicken the blood, promote clot formation, and ultimately lead to a stroke.

“This case underscores the importance of not self-prescribing supplements and understanding the potential risks of iron overuse,” Dr. Naveen emphasized. “Even healthy individuals can develop polycythemia, especially when multiple factors like altitude, genetic mutations, and iron supplementation combine.”

Mrs. Sharma's stroke serves as a reminder that regular health check-ups and a careful approach to supplement use are essential. Particularly for those over 60, or those who have moved to high altitudes, it's crucial to monitor hemoglobin levels and be aware of genetic conditions that may increase stroke risk.

**“Early detection of polycythemia and other risk factors like excessive iron intake can prevent serious complications like stroke,” - Dr. Naveen concluded.**

# Bridging the Gap: Enhancing Critical Care Referrals for Better Outcomes

## Abstract

Early ICU referral improves survival, reduces morbidity and optimizes resources. Delayed referrals increase complication, hospital stay and costs. This paper discusses the importance of timely ICU referrals, their impact on patient outcomes, cost-effectiveness and early warning scores in identifying critical patients.

## Introduction

Critical care is crucial for life-threatening conditions but delayed ICU referrals worsen prognosis, increase complications and add financial burdens. Timely recognition and intervention enhance survival and reduce costs.

## Importance of Early Referral to Critical Care

### 1. Improved Patient Survival

Numerous studies highlight that early ICU referrals lead to a significant decrease in mortality. When patients are identified early and transferred to ICU, timely interventions such as mechanical ventilation, hemodynamic monitoring, and sepsis control can be initiated, preventing irreversible organ damage.

### 2. Reduction in Morbidity and Hospital Stay

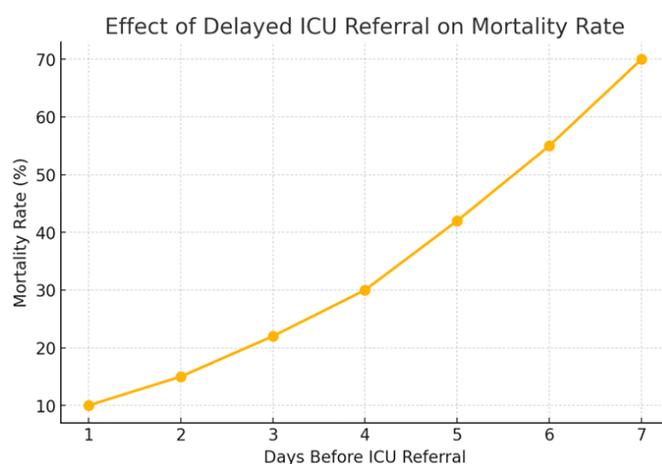
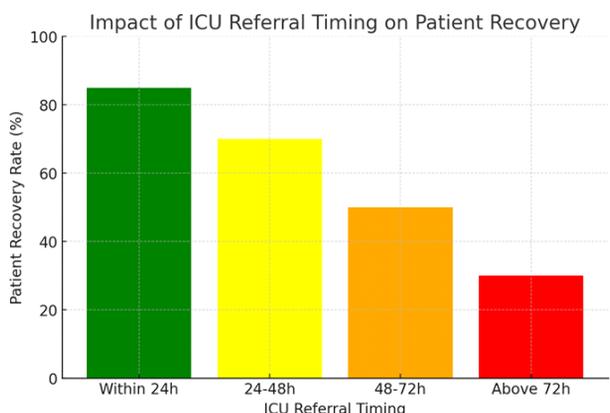
Patients who receive early ICU care often recover faster, requiring fewer invasive interventions, thus leading to a shorter hospital stay and reduced post-hospital complications.

### 3. Cost-Effectiveness for Families and Hospitals

Prolonged hospital stays and late interventions increase healthcare costs exponentially. An early referral reduces the need for expensive procedures and prolonged ventilation, which in turn eases the financial burden on families.

## 4. Case Examples of Patients Who Benefit from Early ICU Referral

- Sepsis Patients: Patients with fever, rapid breathing, low blood pressure, or altered mental status should be referred early to ICU to prevent multi-organ failure.
- Acute Myocardial Infarction (Heart Attack): Early ICU referral can ensure continuous cardiac monitoring, early thrombolysis, and improved survival rates.
- Trauma Patients with Severe Injuries: Patients with significant blood loss, unstable vitals, or head injuries require early ICU admission to prevent deterioration.
- Respiratory Failure Cases: Patients with worsening oxygen saturation levels in pneumonia, ARDS, or COPD exacerbations should be referred to ICU for timely ventilation support.



## Identification of At-Risk Patients: Warning Score Systems

Several early warning scoring systems have been developed to recognize patients who may require ICU admission. These include:

### 1. National Early Warning Score (NEWS-2)

- Measures physiological parameters including respiratory rate, oxygen saturation, blood pressure, pulse rate, consciousness level, and temperature. A higher score indicates an increased risk of
- deterioration and need for escalation of care.

## 2. Modified Early Warning Score (MEWS)

- Focuses on vital signs including heart rate, systolic blood pressure, respiratory rate, temperature, and level of consciousness.
- Helps identify patients who require urgent intervention and ICU admission.

## 3. Sequential Organ Failure Assessment (SOFA) Score

- Assesses organ dysfunction in critically ill patients.
- Helps in decision-making regarding ICU admission for patients with sepsis and multi-organ failure.

## 4. Quick Sequential Organ Failure Assessment (qSOFA)

- Used for sepsis patients in non-ICU settings.
- Based on respiratory rate  $\geq 22$ /min, altered mentation, and systolic BP  $\leq 100$  mmHg.
- Patients scoring  $\geq 2$  are at higher risk of poor outcomes and should be considered for ICU referral.

## Studies Supporting Early ICU Referral

1. Study by Cardoso et al. (2011): Demonstrated that delayed ICU admissions resulted in higher mortality and longer hospital stays. The study emphasized the role of early triage in critical care settings.
2. Jones et al. (2013): Found that implementation of early warning scores significantly improved ICU referrals, reducing mortality rates by 20%.
3. Lui et al. (2019): Reported that early intervention in sepsis patients with high SOFA scores led to a reduction in ICU mortality by 30%.
4. ICU Delayed Admission Study (2020): Showed that patients referred late to ICU had a threefold increase in mortality compared to those admitted early.

## Challenges in Early ICU Referral

1. Lack of awareness and training among physicians and nurses in recognizing early warning signs.
2. Resource limitations in hospitals leading to ICU bed shortages.
3. Delay in decision-making due to unclear protocols for ICU admissions.

## Conclusion

Early referral to critical care units is a game-changer in improving patient outcomes and reducing healthcare costs. Utilizing early warning scoring systems and standardized protocols can bridge the gap in recognizing critically ill patients and expediting their ICU admission. Implementing these strategies will not only enhance survival rates but also ensure better resource utilization, benefiting both hospitals and families.

## Recommendations for Enhancing ICU Referrals

1. Implementing Standardized Early Warning Scores: Hospitals should integrate NEWS-2, MEWS, and SOFA scoring into daily clinical assessments.
2. Training and Awareness Programs: Educating healthcare providers on early identification and referral processes can enhance decision-making.
3. Rapid Response Teams (RRTs): Deploying RRTs for early intervention in deteriorating patients can prevent ICU delays.
4. Clear ICU Admission Protocols: Establishing well-defined criteria for ICU referrals can streamline the process.
5. Improving Communication between Departments: Regular multidisciplinary team meetings and electronic health records can facilitate early referral decisions.



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### References

- Cardoso, L. T. Q., et al. (2011). "Delayed admission to the ICU: A prognostic model for predicting mortality." *Critical Care Medicine*.
- Jones, M., et al. (2013). "Early warning scores: Improving ICU referrals and outcomes." *Journal of Intensive Care*.

# Cost- Effectiveness of Thrombolysis in Acute Ischemic Stroke: Insights for Hospital Administrators

Acute ischemic stroke (AIS) is a leading cause of disability and mortality worldwide. Thrombolysis, particularly with recombinant tissue plasminogen activator (rtPA or alteplase), is the gold standard for AIS treatment within the 4.5-hour window. However, its implementation involves balancing clinical benefits, financial costs, and operational challenges. In this issue, we explore the cost-benefit dynamics of thrombolysis, compare it with conservative management, and provide actionable insights for clinicians and administrators.

## Why Thrombolysis? Clinical Benefits

Thrombolysis is trans-formative for stroke care, offering:

**Improved Functional Outcomes:** A 30% higher chance of achieving functional independence (mRS 0–1) at 3 months.

**Reduced Long-term Disability:** Minimizes the need for rehabilitation, nursing home care, and caregiver burden.

**Lower Mortality and Morbidity:** Early intervention reduces stroke-related mortality and complications.

**Enhanced Hospital Reputation:** Robust stroke programs attract referrals and establish centers of excellence.

### The Cost Equation: Breaking Down the Numbers

Thrombolysis involves significant costs, both direct and indirect:

## Direct Costs

- **rtPA (Alteplase):** 30,000 - 60,000 per patient (0.9 mg/kg, max 90 mg dose).
- **Tenecteplase (Alternative):** 20,000– 30,000 (single bolus dose, cost-effective option).
- **Neuroimaging (CT/MRI with Perfusion Scan):** 5,000– 15,000.
- **ICU/Stroke Unit Admission:** 15,000– 25,000/day.

## Indirect Costs

- **Uninsured Patients:** Many stroke patients lack insurance, increasing out-of-pocket expenses.
- **Complications:** Hemorrhagic transformation (~6% risk) can prolong ICU stays and escalate costs.
- **Mechanical Thrombectomy:** If thrombolysis fails, additional procedures cost 2– 5 lakhs.

## Conservative Management: A Comparative Analysis

Conservative management, including supportive care and antiplatelet therapy, is often chosen due to delayed presentation, financial constraints, or contraindications to thrombolysis. Here's how it compares:

### Clinical Outcomes

**Functional Independence:** Conservatively managed patients have significantly lower rates of functional independence (mRS 0–1).

**Disability and Dependency:** Higher long-term disability increases the need for rehabilitation and caregiver support.

**Mortality Rates:** Mortality is higher in conservatively managed patients, especially in large vessel occlusion.

### Financial Implications

**Initial Costs:** Avoids high upfront costs of thrombolysis (e.g., rtPA, neuroimaging).

**Long-term Costs:** Higher disability rates lead to increased expenses for rehabilitation, nursing home care, and lost productivity.

**Burden on Families:** Prolonged dependency places significant emotional and financial strain on caregivers.

## Cost-Benefit Analysis: Hospital Perspectives

The financial viability of thrombolysis varies by hospital type:

**Large Hospitals with Comprehensive Stroke Centers:** Benefits outweigh costs due to high patient turnover, insurance reimbursements, and enhanced reputation.

**Small/Mid-sized Hospitals:** High drug costs and

infrastructure requirements (24/7 Neuroimaging, ICU) may make thrombolysis financially challenging.

**Government/Public Hospitals:** Cost-effectiveness improves with subsidies (e.g., Ayushman Bharat, state health schemes).

In contrast, conservative management may seem cost-effective initially but often leads to higher long-term costs due to poor patient outcomes.

## Overcoming Barriers to Thrombolysis

In India, only 20% of AIS patients receive thrombolysis. Key barriers include:

**Delayed Presentation:** 55% of patients arrive beyond the 4.5-hour window due to lack of awareness and transportation delays.

**Financial Constraints:** High costs of thrombolytic agents and ICU care deter treatment for uninsured patients.

**Infrastructure Gaps:** Limited availability of 24/7 neuro imaging and stroke-ready ICUs in smaller hospitals.

## Strategic Recommendations for Clinicians and Administrators

To optimize thrombolysis implementation, consider the following strategies:

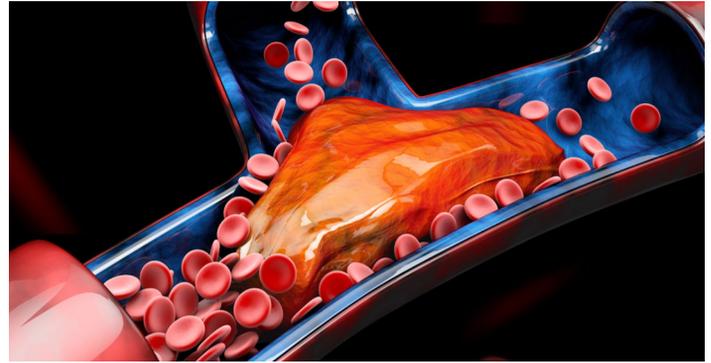
**Adopt Tenecteplase:** A cost-effective alternative to alteplase with comparable efficacy and easier administration.

**Invest in Stroke-ready Infrastructure:** Establish 24/7 stroke units with tele-neurology support to streamline care.

**Leverage Government Schemes:** Maximize reimbursements through Ayushman Bharat and state health programs.

**Public Awareness Campaigns:** Educate communities about FAST symptoms and the importance of early hospital arrival.

**Develop Thrombectomy Pathways:** Partner with higher centers for cases requiring mechanical thrombectomy.



## Key Statistics: Thrombolysis in India (Data up to 2024)\*

**Thrombolysis Rates:** Only 20% of AIS patients receive thrombolysis.

**Mortality Rates:** In large vessel occlusion, mortality is 33% with intravenous thrombolysis and 16% with endovascular treatment.

**Barriers:** Delayed presentation (55%), financial constraints (4.5%), and hospital-related factors (14%).

**Functional Outcomes:** Patients receiving thrombolysis have a 30% higher chance of achieving functional independence (mRS 0–1) at 3 months compared to conservative management.

**Long-term Costs:** Conservatively managed patients incur 2–3 times higher long-term costs due to disability and dependency.

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## Final Thoughts

Thrombolysis for AIS is a clinically and financially viable intervention when patient selection is optimized, and costs are managed effectively. While conservative management may seem cost-effective initially, it often leads to higher long-term costs and poorer patient outcomes. By investing in infrastructure, leveraging cost-effective alternatives, and enhancing public awareness, hospitals can maximize patient outcomes while maintaining financial sustainability.

# A Life-Saving Journey: The Story of Ramaiah

**R**amaiah, a 60-year-old male, arrived at the Emergency Room in a semi-conscious state, showing unmistakable signs of severe shock. His pulse raced at 160 beats per minute, and his blood pressure was unrecordable, a clear indication of critical hemodynamic collapse. He had been suffering from prolonged diarrhea, which likely contributed to his condition.

In a matter of minutes, the ER team swung into action. Aggressive resuscitation began with the establishment of two large-bore IV lines for fluid infusion and immediate oxygen support. The severity of his condition prompted an urgent call to the ICU team for further intervention.

Once transported to the ICU, the situation remained dire. Ramaiah's pulse dropped slightly to 136 beats per minute, but his peripheral pulses were weak. To monitor his renal function more closely, a Foley catheter was inserted to track urine output. Under the leadership of Dr. Sujatha, the ICU consultant, the team initiated the ICU Sepsis Protocol. Vasopressors, antibiotics, IV fluids, and sodium bicarbonate were administered in a race against time to stabilize his condition.

As hours passed, the medical team faced mounting challenges. Despite their best efforts, Ramaiah's urine output remained at zero—a worrying sign of acute kidney injury. Serial arterial blood gases revealed a slow, but gradual, improvement in lactate levels, suggesting the body was responding to treatment.

Then, after eight long hours, the first sign of recovery appeared. Urine output began to trickle in at 10-20 mL/hour, sparing Ramaiah from the immediate need for dialysis. After a brief team discussion led by Dr. Rakesh, the Head of Department, it was decided to withhold dialysis for an additional 12 hours. The hope was to give Ramaiah's kidneys more time to recover, trusting that his condition was improving.

Gradually, Ramaiah's hemodynamics improved. The team cautiously began to wean him off noradrenaline, and family members, who had been anxiously waiting outside, were updated on his progress. The relief on their faces was palpable.

Two days later, Ramaiah was stable enough to be transferred to a regular ward. His biochemical values were steadily normalizing, and the possibility of dialysis and mechanical ventilation was successfully avoided. Ramaiah, along with his family, expressed profound gratitude to the medical team, and the staff too felt the elation of a battle well fought—thanks to careful, thoughtful intervention and the team's unwavering commitment to his recovery.

That evening, as the moon illuminated the hospital's windows, Dr. Sujatha, Dr. Rakesh, and the ICU team quietly reflected on their collective success. In a world often focused on data, numbers, and outcomes, they had managed to navigate the complexities of critical care, preserving not only the patient's life but also his dignity.

## Take-Home Message:

In critical care, aggressive intervention can save lives, but wisdom and restraint often determine the best outcomes. Striking a balance between immediate action and careful consideration can make the difference between life and death. Dr. Rakesh's expert leadership, combined with the team's timely and measured approach, turned a near-miraculous recovery into a story of survival.

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# The Power of a Listening Ear: How Communication Transforms Patient Care

## *Mrs. Padmavathi's Journey to Healing*

Mrs. Padmavathi from Khammam arrived at NASA Hospitals, her brow furrowed with worry, her hand clasped tightly in her son's. She'd been experiencing persistent back pain for months, and the local doctors hadn't been able to pinpoint the cause. The journey to Hyderabad had been long and arduous, and her anxiety was palpable. As she sat in the waiting area, she felt lost and overwhelmed, just another patient in a busy hospital.



But then, something shifted. Dr. [Doctor's Name], a neurosurgeon at NASA Hospitals, didn't just rush in, diagnose, and prescribe. He sat down with Mrs. Padmavathi, eye to eye, and listened. He listened to her describe the pain, her fears, her frustrations. He listened to her son explain the impact this had on their lives. He didn't interrupt, he didn't dismiss her concerns. He simply listened, with genuine empathy. This simple act of listening, of truly hearing her, made all the difference. Mrs. Padmavathi later shared that it was the first time she felt truly seen and understood by a medical professional. Dr. [Doctor's Name] then explained her condition in simple, clear language, ensuring she understood the potential causes, the proposed investigations, and the various treatment options. He answered her questions patiently, addressing each concern with respect and honesty. Mrs. Padmavathi's experience highlights the crucial role of communication in enhancing the patient experience during a hospital stay. Effective communication isn't just about conveying medical information;

it's about building trust, reducing anxiety, and empowering patients to actively participate in their own care.

### The NASA Hospitals Difference:

Mrs. Padmavathi's story isn't unique. It's a reflection of our commitment to putting patients at the center of everything we do. We strive to create a culture of open dialogue, empathy, and understanding, ensuring that every patient's hospital journey is not only about healing but also about feeling supported, respected, and heard. Because at NASA Hospitals, we believe that true healing begins with a listening ear.



### The Cornerstone of Compassionate Care:

At NASA Hospitals, we believe that communication is as vital as medical expertise. We understand that a hospital stay can be a stressful and vulnerable time for patients and their families. That's why we prioritize clear, compassionate, and transparent communication at every level of care.

# Beyond the Diagnosis:



**Building Trust and Reducing Anxiety:** Open and honest communication from doctors and nurses helps patients feel more in control of their situation. Explaining medical jargon in simple terms builds trust and reduces the anxiety that often accompanies uncertainty.

**Encouraging Patient Involvement:** When patients understand their treatment options, they become active participants in their care. We encourage questions, listen to patient preferences, and empower them to make informed decisions about their health.

**Seamless Coordination:** Effective communication between different departments and medical teams ensures coordinated care, reducing errors and improving treatment effectiveness.

**Emotional Support:** A kind word, a reassuring presence, and genuine empathy can make a world of difference. We train our staff to provide emotional support, recognizing that healing is more than just physical.

**Addressing Family Concerns:** We understand that families are an integral part of the patient's support system. We provide regular updates and transparent communication to family members, ensuring they feel involved and informed.



**Kamakshi Kalyani Akkana**  
Additional Director

# OPPORTUNITIES IN NEURO & SPINE

## – A FUTURISTIC THOUGHT ON TECHNOLOGICAL ADVANCEMENT

The fields of neuro and spine specialties are rapidly advancing, driven by technological innovations, evolving healthcare needs, and the increasing prevalence of neurological and spinal disorders. Here are some future opportunities and trends that are expected to shape these specialties:

### 1. Neurotechnology and Brain-Computer Interfaces (BCIs)

- **Opportunities:** BCIs are making strides in helping patients with severe neurological conditions such as paralysis, brain injuries, and even neurodegenerative diseases like ALS and Parkinson's. These technologies can enable patients to control external devices, communicate, or regain lost motor functions.
- **Future Impact:** Neurotechnological innovations are likely to expand, offering solutions for rehabilitation, enhancing cognitive function, and possibly providing treatments for conditions that currently have no cure, like Alzheimer's disease.

### 2. Advances in Spinal Surgery: Robotics and Minimally Invasive Techniques

- **Opportunities:** The use of robotics in spine surgery has been growing, leading to greater precision, reduced complication rates, and faster recovery times. Minimally invasive techniques are also expected to improve, allowing for smaller incisions and less postoperative pain.
- **Future Impact:** As robotic systems and artificial intelligence improve, these technologies will make spinal surgeries even more efficient, safer, and more accessible, reducing the need for open surgeries.

### 3. Artificial Intelligence (AI) and Machine Learning in Diagnosis and Treatment

- **Opportunities:** AI can analyze vast amounts of patient data and assist in diagnosing neurological disorders like brain tumors, strokes, and spinal conditions more accurately and quickly. AI-powered imaging tools, such as those using MRI or CT scans, can help detect early-stage conditions and guide treatment decisions.
- **Future Impact:** AI will continue to evolve and could potentially lead to more personalized treatment plans, predictive models for disease progression, and better outcomes for patients.

### 4. Telemedicine and Remote Monitoring

- **Opportunities:** Telemedicine has already seen a significant rise, especially after the COVID-19 pandemic, and its role in neurology and spine care is likely to continue expanding. Remote monitoring technologies, such as wearable devices, can track patient progress in real-time, especially for chronic neurological conditions like epilepsy or Parkinson's disease.
- **Future Impact:** The growth of telehealth and remote patient management will improve access to specialists, reduce wait times, and allow for continuous care, especially in underserved or rural areas.

### 5. Global Health Expansion and Accessibility

- **Opportunities:** As global healthcare systems improve, especially in developing countries, there will be increased demand for specialized neuro and spine care. Expanding access to care in underserved areas presents a huge opportunity for telemedicine, mobile health clinics, and international collaborations to provide high-quality care.
- **Future Impact:** This could improve healthcare equity, allowing more patients worldwide to access advanced treatments and improve overall outcomes for those with neurological and spinal conditions.

### Conclusion

The future of neuro and spine specialties is bright, with cutting-edge technologies, personalized treatments, and advanced surgical techniques leading the way. These specialties will continue to evolve to meet the increasing demand for better treatment options and improve the lives of patients suffering from complex conditions. As innovation accelerates, the potential for breakthroughs in patient care and quality of life grows significantly.



**M.S. Guru Prasad**  
Chief Growth Officer



In this issue, we'll explore important initiatives shaping the healthcare industry. As we navigate through the New Year, healthcare professionals are facing evolving challenges and opportunities. Let's dive in!

The healthcare industry continues to face an ongoing talent shortage, with staffing gaps widening across key sectors. This challenge has placed increased pressure on HR departments to attract, retain, and support skilled healthcare workers.

## WHAT HR CAN DO?

**Expand Recruitment Pools:** Consider hiring from a more diverse talent pool, such as retired healthcare professional or cross-sector professionals who can transition into healthcare roles.

**Focus on Employee Well-being:** Mental and emotional well-being programs are essential in retaining healthcare staff. Implement regular wellness initiatives to address burnout.

**Adopt Flexible Staffing Models:** Leverage temporary staff or part-time employees to alleviate pressures on existing staff. Work with staffing agencies to ensure quick turnaround for urgent

### Employee Retention in a Competitive Market

With competition for talent increasing, retaining skilled healthcare workers is more important than ever.

### Effective Retention Strategies:

**Offer Career Development Opportunities:** Provide pathways for advancement and training programs to keep employees engaged.

**Competitive Compensation & Benefits:** Regularly assess pay scales to ensure they are competitive with industry standards.

**Recognize and Reward Contributions:** Implement formal recognition programs to celebrate the hard work and achievements of healthcare staff.

**Celebrating our Frontline Heroes:** Every month, we take a moment to celebrate the extraordinary contributions of our healthcare staff starting from February 2025.

That's a wrap for this month's HR newsletter!

We hope you find these insights helpful in navigating the evolving healthcare landscape. Stay tuned for next month's edition as we continue to bring you the latest trends and strategies in HR and healthcare.

For questions, suggestions, or to contribute to next month's newsletter, reach out to our HR team at [krishnakishore@nasahospitals.com](mailto:krishnakishore@nasahospitals.com)



**Krishna Kishor**  
HR

# Rise of Healthcare India



India's outlook on the Healthcare Industry looks promising when compared with emerging and developed nations across the world.

India's growing population, rising middle class, and growing awareness of healthcare after the COVID-19 pandemic drive demand for quality and affordable medical services.

The government's focus on healthcare, evident in initiatives like the Ayushman Bharat scheme, is transforming healthcare access for the economically disadvantaged. It already catered to 50 cr of the Indian population along with state initiatives like Arogyasree.

The National Digital Health Mission is creating a digital health ecosystem. India is becoming a preferred destination for affordable, high-quality treatments, driving growth in the medical tourism segment. The sector is expected to grow to \$13 billion by 2026.

If we look at opportunity in India there is a Infrastructure gap where India needs an additional 3.6 million hospital beds, 3 million doctors, and 6 million nurses by 2034 to meet global healthcare standards. Increasing demand for affordable and quality healthcare is poised to grow health insurance penetration.

Rural and Tier2 towns need a lot of infrastructure where there is a lot of scope, and people are ready to pay for quality healthcare. If we look at the Indian healthcare industry reached over \$370 billion in 2022 and it is expected to reach over \$610 billion by 2026. The Indian healthcare market is expected to grow at a CAGR of 22% from 2023 to 2030. This growth is driven by increasing healthcare awareness among all classes, rising per capita income, and other government initiatives.

India's healthcare spending is expected to rise to 3.5% of GDP by 2025 (up from ~2.1% in 2023), driven by public and most of private investments. Rural India infrastructure projections by government plans to add 1.5 million hospital beds by 2025 to meet growing demand.

Govt of India prioritized the healthcare sector in the Budget presented by Financial Minister Smt Nirmala Seetharaman with the following incentives and announcements, which will help in boosting of the healthcare sector.



**Sukumaar DG**  
Business Editor - Tv9

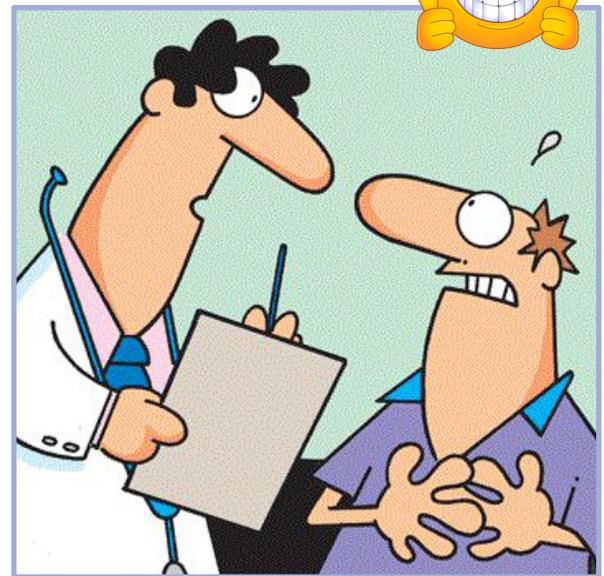
# Academic Activity



## Do You Know?

- The human brain will grow three times its size in the first year of life. It continues to grow until you're about 18 years old.
- It's a myth that you only use 10% of your brain. You actually use all of it, even when you are sleeping. Neurologists confirm that your brain is always active.
- Brain information can travel up to an impressive 350 miles per hour. When a neuron is stimulated, it generates an electrical impulse that travels from cell to cell.
- Humans have the same number of neck vertebrae as giraffes and camels
- The human body has 206 bones, with more than half of them located in the hands and feet.
- The knee joint is the largest and most complex joint in the human body.
- The left side of the brain controls the right side of the body and vice versa
- The spinal cord doesn't take all its signals from the brain its can function independently.

## Funny Bone



**Patient:** Doctor, my knee hurts when I run.  
**Doctor:** Then stop running and come to us we'll fix it before you start a marathon

## Quote of the Month

**Good health is not something we can buy. However, it can be an extremely valuable savings account.**

*- Anne Wilson Schaefer*



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