

CARE

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Exclusive Updates | Inspiring Stories | Healthcare Innovations



Page No. 13 & 14

Pediatric Empyema: Why Earlier Decortication is Making Our Lives Easier

Dr. Vittal Kumar Kesireddy
HOD & Sr. Consultant - Paediatrics

Page No. 19

Restoring the Gift of Hearing: 2,000+ Lives Reconnected Through Micro Ear Surgery (Stapedotomy)

Dr. N Vishnu Swaroop Reddy
Clinical Director, Head of the Dept &
Chief Consultant E.N.T and Facial Plastic Surgeon



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CARE Hospitals, Banjara Hills

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01 FROM HCOO DESK

02 FROM THE EDITORS DESK
Dr. B. Ravinder Reddy

03-12 AI IN HEALTHCARE
Dr. Sreekanth Manda | Dr. R. Irene Faith Manoja |
Dr. Sreekanth U | Dr. Johann Christopher |
Dr. P. C. Gupta & Dr. Vamsi Krishna Yerramsetty |
Dr. B. Ravinder Reddy

13&14 PAEDIATRICS

15 ECMO PROGRAM

16 WELLNESS & LIFESTYLE

17&18 A DAY IN THE LIFE
Laboratory Medicine

19 ACHIEVEMENTS

20 TID BITS

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A New Chapter of Collaboration, Innovation, and Intelligent Care

Dear Team, Partners, and Well-Wishers,

Stepping into CARE Hospitals, Banjara Hills has been both a privilege and an inspiring experience. From my very first day, what stood out was not just the scale of excellence this institution represents, but the warmth, commitment, and unity of its people.

I am deeply grateful for the heartfelt welcome extended to me by every member of the CARE family. It reaffirmed my belief that great healthcare institutions are not built only on infrastructure or technology—but on people who bring purpose to every action and compassion to every patient interaction. Over the past few weeks, I have had the opportunity to closely understand our operations, engage with teams across departments, and listen—to ideas, challenges, and aspirations. What I have witnessed is a strong foundation, complemented by an equally strong intent to evolve and improve.

Turning Challenges into Opportunities

Every healthcare institution of our scale encounters complexities—be it in patient flow, operational efficiencies, or adapting to rapidly changing healthcare needs. What excites me is the collective mindset here: a willingness to solve, collaborate, and move forward.

Together, we have already begun addressing key operational challenges by:

- Streamlining processes to enhance patient experience

- Strengthening interdepartmental coordination
- Enabling faster, data-driven decision-making
- Creating systems that support both caregivers and patients seamlessly

These are not just improvements—they are steps toward building a more responsive and resilient healthcare ecosystem.

The Role of AI in Shaping the Future of CARE

As we look ahead, one of the most transformative forces in healthcare is Artificial Intelligence.

AI is no longer a concept of the future—it is actively reshaping how we diagnose, treat, and care. At CARE Hospitals, Banjara Hills, we see AI as an enabler that empowers our clinicians and enhances patient outcomes.

From:

- Early and accurate diagnostics through intelligent imaging
- Predictive analytics for better clinical decision-making
- Operational optimization to reduce wait times and improve efficiency
- Personalized treatment pathways tailored to individual patient needs

AI allows us to move from reactive care to proactive and preventive healthcare. However, it is important to remember—technology will never replace the human touch that defines CARE. Instead, it strengthens our ability to deliver it more effectively.



Mr. Abhinav Joshi
Hospital Chief Operating Officer
CARE Hospitals, Banjara Hills

Building Together, Growing Together

What truly defines this journey is teamwork. The energy, openness, and dedication I see across teams assure me that we are on the right path—not just to grow, but to lead.

To our doctors, nurses, and caregivers—you are the heart of this institution.

To our administrative and support teams—you are the backbone that keeps everything moving seamlessly.

To our partners and community—your trust continues to inspire us every day.

The Road Ahead

As we continue this journey, our focus remains clear:

- Deliver exceptional patient care
- Embrace innovation with purpose
- Foster a culture of collaboration and continuous improvement

This is not just my vision—it is our shared vision.

Together, let us build a future where CARE Hospitals, Banjara Hills continues to set benchmarks—not just in clinical excellence, but in compassion, innovation, and trust.

On behalf on the Editorial Board, it is a pleasure to welcome Mr. Abhinav Joshi, the Hospital Chief Operating Officer!

The March issue of our newsletter lays emphasis on the evolving role of Artificial Intelligence (AI) in healthcare facilities. AI has definitely improved the data-driven support systems, diagnostic competency and therapeutic prompts, to potentially enhance the operational efficiency and perhaps even patient outcomes.

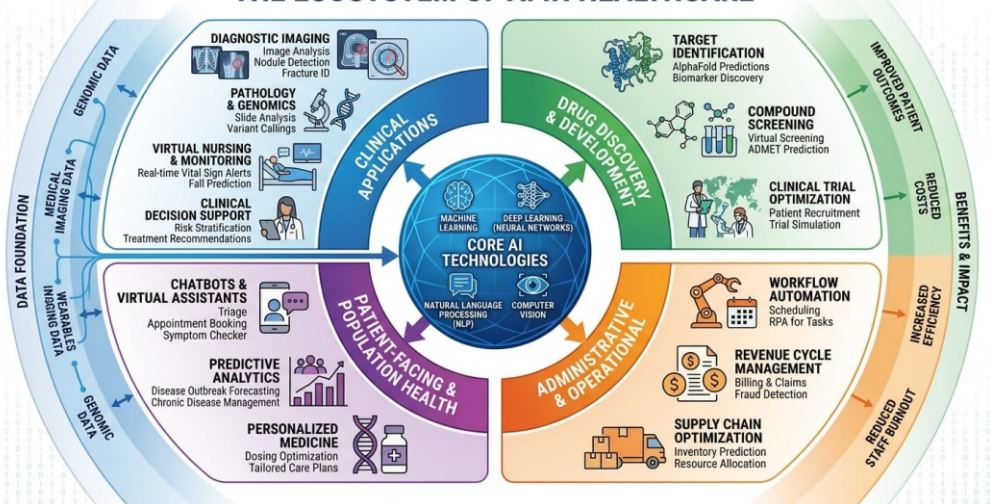
The capability of AI algorithms, particularly in medical imaging and digital pathology are enhancing the proficiency, as detailed by Dr Srikanth Pankanti and Dr Irene Faith Manoja in their respective articles. Dr Johan Christopher gives an insight into the role of AI in cardiology, apart from its use in hospitals. Dr PC Gupta and Dr Y. Vamsi Krishna describe significant impact of AI in vascular diseases. The analytical strengths of AI in improving administrative issues are very well charted by our hospital Deputy Medical Superintendent, Dr Sreekanth Manda. In addition, in my article, I have summarised the multiple benefits, whilst also illustrate the published limitations and cautions of AI in healthcare.

We are delighted to introduce a new feature to our monthly newsletter - reviewing interesting and insightful books related to the field of healthcare. The issue also includes excellent clinical achievements and illuminating articles from the departments of ENT, paediatrics and critical care, apart from the usual interesting tidbits and insights into the work of laboratory technician. Once again, it is an absolute pleasure to bring forth this newsletter, which we hope that you will find it be informative and interesting.



Dr. B. Ravinder Reddy
Editor-in-Chief

THE ECOSYSTEM OF AI IN HEALTHCARE



AI in Healthcare Administration: Working Smarter, Caring Better

Artificial Intelligence (AI), which once felt like something distant and futuristic, is now slowly becoming a part of our everyday work in healthcare. At CARE Hospitals, Banjara Hills where we constantly strive to balance efficiency with compassionate care, AI offers us a meaningful way to do both better.

In medical administration, our days are often filled with reviewing data, preparing reports, coordinating between teams, and ensuring everything runs smoothly behind the scenes. These are important tasks, but they can also be time-consuming. What I have begun to notice, especially after attending a recent conference on AI in healthcare, is how tools like Claude, Nano Banana, Gemini, Gamma, Canva, Fireflies, Notebook LM etc can quietly make this work easier. Whether it is quickly analysing admission trends, identifying gaps in processes, or even helping structure a presentation for a review meeting, AI allows us to save time and focus on what truly matters.

There is also something reassuring about how these tools bring clarity. A complex set of numbers can be turned into simple insights. A rough idea can become a well-structured report or presentation. In areas like audits and medico-legal documentation, where attention

to detail is critical, this support can make a real difference.

I must admit, I have only recently started using AI myself. But even in this short time, it has changed the way I approach my work. It doesn't replace our thinking—it strengthens it. It gives us more space to reflect, plan, and lead.

As we move forward at CARE Hospitals, Banjara Hills embracing such tools thoughtfully can help us work smarter while continuing to deliver the same empathy and care that define us. Sometimes, small changes in how we work can create the biggest impact.



Dr. Sreekanth Manda
Deputy Medical Superintendent



AI- The new face of Radiology

In the recent years, artificial intelligence (AI) has picked up pace in all spheres of life including the medical field. It has become a revolutionary medical tool that can change diagnostic strategy and improve the quality of medical services.

AI, through machine and deep learning algorithms has found its place in diagnostic Radiology in X-rays, Computed Tomography (CT), Magnetic Resonance imaging (MRI), Ultrasound, Nuclear medicine and Interventional Radiology. One interesting fact is that nearly 75% of FDA approved applications in AI are for radiology. Radiology is at the forefront of AI and it is primarily because it deals with images and digital data. Radiology at its core was always about pattern recognition, identifying subtle contrast between normal and abnormal, mainly relying on visual acuity, anatomical knowledge and clinical intuition. The recent evolution and adaptation of AI in Radiology provides an additional layer of precision in identifying abnormal tissue/lesions, reducing false positives and negatives, creating a rapid triage system and acting as a "second reader" where AI helps in highlighting suspicious areas, reducing oversight errors, playing a pivotal role in prioritizing urgent cases and automate report generation. It also helps in minimizing waiting time for patients, thus creating work flow optimization and ensuring more reliable diagnostics.

We all are familiar with Chat - GPT and many of us are already using this AI tool in our practice. A study conducted for reporting 50 images of chest and musculoskeletal X-rays between years 2019-2024 using Chat -GPT (GPT-4 model) showed an accuracy of 70% in diagnosing chest X-rays and 52% in diagnosing skeletal X-rays. This shows that while Chat GPT was useful as a preliminary diagnostic suggestion within seconds, it also showed the importance of a Radiologist for a second opinion and it cannot replace their expertise. Artificial Intelligence uses various Deep Learning algorithms, like Convolutional Neural Networks (CNNs) and CheXNeXt, thereby reducing diagnostic errors and managing large case load. Aidoc, Arterys Cardio AI, Qure.ai and Koios DS are the other FDA approved AI-based software that are already transforming radiology practice through integration with PACS, highlighting urgent cases and provide quantitative overlays in stroke, neuroimaging, chest & cardiac imaging, musculoskeletal and oncoimaging. It also gives measurable data (e.g., tumor size, organ volume), supporting precise monitoring and treatment planning. Another major conceptual shift in AI is Vision-Language models (VLMs) like BioViL-T and CheXagent which help in synthesis of image and language and has a potential to



Dr. R Irene Faith Manoja
Consultant - Radiology

streamline communication between clinicians, improve reporting efficacy and facilitate real-time clinical decision making. Along with benefits come challenges and limitations. AI is not yet there fully and it poses risks in maintaining patient data and privacy, potential bias in AI algorithms and needs reliable validation of AI algorithms ("black box" problem). Hence, the goal is not to develop AI models that simply narrate what they see. The goal is to build systems that understand what matters in the clinical moment and communicate that understanding clearly, accurately and equitably. To conclude, AI does not replace Radiologist's eye; rather it extends its capacity. Radiologists have started to integrate AI technologies into clinical practice, potentially improving diagnostic accuracy and efficiency. It is still challenging and needs continuous research and innovations to refine AI algorithms and ensure clinical reliability.

AI in Digital Pathology: Transforming the Diagnostic Landscape

Digital pathology is entering a new phase where Artificial Intelligence is becoming an important extension of the pathologist's workflow. The transition from conventional glass slides to high-resolution digital images has created opportunities for faster analysis, improved consistency, and better clinical decision-making. In a field where even microscopic variation can change treatment plans, AI is helping bring greater precision and standardisation to diagnosis.

Improving Efficiency in Routine Work

A large part of pathology involves repetitive tasks that demand both time and concentration. Counting mitotic figures, assessing Ki-67 proliferation, identifying tumour margins, and scoring biomarkers like HER2 or PD-L1 are essential but often labour-intensive. AI can assist by performing these measurements quickly and consistently, reducing observer variation and improving turnaround time. In areas such as blood smear analysis and cervical cytology, AI-supported pre-screening has also shown strong potential in reducing manual workload while maintaining diagnostic quality.

Strengthening Early Cancer Detection

In cancer diagnostics, speed and accuracy are critical. AI

can review whole-slide images and highlight suspicious regions before the pathologist begins detailed evaluation. This helps prioritise urgent cases and reduces the risk of subtle abnormalities being missed, especially in high-volume settings such as breast, prostate, and cervical cancer screening. Rather than replacing review, AI serves as an early warning system that helps pathologists focus attention where it is needed most.



Dr. Sreekanth U

Clinical Director & HOD - Lab Medicine



Supporting Precision Oncology

AI is also expanding what pathology can reveal beyond what is visible under the microscope. It can identify hidden patterns in tissue architecture, nuclear morphology, and tumour microenvironments that may correlate with prognosis, treatment response, or underlying genetic mutations. This supports more personalised cancer care by helping predict outcomes and guide therapy decisions. In some cases, AI can even estimate molecular characteristics directly from routine H&E slides, reducing the need for additional expensive testing.

Addressing Workforce Challenges

With rising case volumes and a shortage of trained pathologists worldwide, maintaining both speed and quality is becoming increasingly difficult. AI helps by automating routine quantification and screening so that specialists can devote more time to complex interpretive cases. This improves workflow efficiency and reduces fatigue without compromising clinical oversight. The final responsibility for diagnosis remains with the pathologist, while AI functions as a highly reliable support system.



Bringing Greater Standardisation

Diagnostic consistency is a major challenge across laboratories and institutions. Variations in interpretation can influence tumour grading, staging, and treatment planning. AI applies uniform analytical criteria, helping reduce these differences and improve reproducibility. This is especially valuable in oncology, where treatment pathways often depend on highly specific pathological findings. Standardisation also improves access to quality diagnostics in centres where subspecialty expertise may be limited.

Maintaining Clinical Judgment and Safety

Despite its advantages, AI must be used responsibly. Data quality, algorithm bias,

and patient privacy remain important concerns. AI systems are only as reliable as the data used to train them, and inappropriate dependence on automation can create new risks. Strong validation, regular review, and continuous human supervision are essential. AI should assist clinical judgment, not replace it.

The Way Forward

The future of pathology lies in collaboration between technology and expertise. AI is not replacing the pathologist; it is strengthening the pathologist's ability to deliver faster, more accurate, and more personalised care. Just as the microscope once transformed diagnosis, AI is now reshaping how pathology supports modern medicine.

The goal remains the same: precise diagnosis at the right time, leading to better outcomes for every patient.

Artificial Intelligence in Clinical Practice and Cardiology: From Data to Decision-Making

Artificial Intelligence is no longer a concept for the future; it is already transforming how we manage data, make decisions, and deliver care. Its real strength lies in handling massive volumes of information at speeds no human can match, uncovering insights that would otherwise take weeks of manual effort to identify.

Turning Data into Insight

Modern medicine generates an enormous amount of data every day. AI helps convert this information into meaningful clinical insights with speed and precision. For example, identifying every patient with heart failure and reduced ejection fraction across thousands of records was once a time-consuming task requiring weeks of manual review. Today, AI can process that query in minutes, making clinical audits, outcome tracking, and evidence-based decisions far more efficient.

Supporting Research and Clinical Studies

AI is also changing how clinical research is conducted. By quickly filtering patients based on diagnosis, laboratory values, treatment history, or even geographic location, it becomes much easier to assess study feasibility and identify the right participants. This improves screening efficiency, strengthens randomisation quality, and helps clinicians participate more effectively in research and sponsored trials.

Improving Workflow and Efficiency

In daily practice, AI helps reduce the administrative burden that often slows OPD workflow. Appointment schedules can be optimised based on patient load, while elderly patients or those with mobility challenges can be automatically assigned more suitable time slots. By managing availability dynamically, AI reduces overbooking, improves patient flow, and creates a smoother outpatient experience.

Enhancing Prescription Safety

One of the most practical applications of AI is in prescribing safety. Clinical decision-support systems act as a second layer of review by identifying drug interactions, incorrect dosing, or medications that may worsen an existing condition. For example, if multiple medicines that reduce heart rate are prescribed together, the system immediately generates an alert. This improves patient safety while also strengthening medical and legal compliance.

Better Communication with Patients

AI also improves communication with patients by making clinical data more transparent. By retrieving outcomes from similar cases, clinicians can explain expected treatment results more clearly and support decision-making with real-world evidence. This



Dr. Johann Christopher

Consultant - Interventional Cardiology and Cardiac Imaging

with real-world evidence. This builds trust and helps patients feel more informed and confident about their care.

Faster Documentation

Routine documentation such as prescriptions, discharge summaries, and follow-up plans can now be generated quickly and accurately using AI-enabled systems. What previously required several minutes of manual writing can now be completed in seconds, improving turnaround time and allowing clinicians to focus more on patient care.

Supporting Continuous Learning

AI is increasingly becoming an academic partner for clinicians. While preparing presentations or reviewing complex topics, doctors can use AI to compile structured information from multiple medical sources quickly. This saves time and improves efficiency, while clinical expertise remains essential for interpretation, validation, and decision-making.

AI in Cardiology: Improving Accuracy and Speed

Artificial Intelligence is especially valuable in cardiology, where ECGs, echocardiography, CT scans, and cardiac MRI generate large volumes of data every day. In high-volume centres, maintaining consistent accuracy across hundreds of investigations can be challenging due to operator fatigue, inter-observer variation, and the subtle nature of early disease patterns.

AI in ECG Interpretation

AI significantly improves ECG reporting by identifying subtle findings that may be difficult for the human eye to detect. Small ST-segment deviations, early ventricular dysfunction, chamber enlargement, hypertrophy, and rhythm abnormalities can be recognised more consistently and accurately.

Because AI continuously analyses large datasets, it can also compare ECGs over time. When a patient's ECG from January is compared with one from March, even small changes can be detected early. This helps predict major events such as myocardial infarction, heart failure, sudden cardiac death, or hospitalisation before symptoms become severe. AI also prioritises abnormal ECGs by generating red flags automatically, allowing technicians and nurses to alert physicians immediately so that high-risk patients receive faster evaluation.

AI in Echocardiography

Echocardiography benefits greatly from AI because it

generates large amounts of quantitative data. Measurements such as left ventricular size, atrial dimensions, wall thickness, valve function, and ejection fraction become more accurate and reproducible, regardless of operator expertise.

When serial echocardiograms are compared, even small increases in ventricular size, worsening mitral regurgitation, or early hypertrophy can be identified sooner. This enables earlier intervention, better treatment planning, and improved long-term outcomes. Automation is another major advantage. Instead of spending several minutes manually calculating volumes and measurements, clinicians can acquire standard views quickly while AI completes the analysis automatically. This reduces waiting time, improves workflow, and increases the number of patients who can be screened effectively.

AI in Cardiac CT and MRI

In CT and MRI, AI enhances plaque assessment and structural analysis with greater precision than visual estimation alone. Plaque burden, stenosis severity, calcium scoring, and plaque composition can be measured far more accurately. For example, a vulnerable lipid-rich plaque that may appear insignificant during routine review can be immediately flagged by AI for closer evaluation. This helps prevent important findings from being missed, especially during high-volume reporting.

When ECG, Echo, CT, and MRI findings are integrated

together, AI helps create a more refined diagnosis and stronger prognostic prediction. Patterns that may not be obvious when each investigation is reviewed separately become much clearer when analysed together.

Balancing Benefits with Responsibility

Despite its advantages, AI must be used responsibly. Data privacy, security, and the risk of over-reliance on automated systems remain important concerns. Clinical judgement and human oversight are non-negotiable. AI should support decision-making, not replace it.

The Way Forward

Ultimately, AI is an efficient enabler. By improving diagnostic yield, refining prognosis, enhancing workflow, and supporting better patient communication, it allows healthcare to become more precise, safer, and more patient-friendly. The future of medicine is not AI replacing doctors. It is doctors using AI to deliver better care.

AI in Vascular Medicine: Precision in Diagnosis and Risk Prediction

Artificial Intelligence (AI) is rapidly becoming a cornerstone of vascular medicine. In a field where early detection and precise risk stratification are everything, AI acts as a high-powered lens, helping clinicians spot subtle patterns in imaging and data that might otherwise go unnoticed.

Decoding the Tech: The AI Toolkit

While the terminology can feel dense, AI in a vascular context generally falls into four practical categories:

- **Machine Learning (ML):** These algorithms sift through clinical data to identify patterns, helping predict disease progression or potential complications.
- **Deep Learning (Neural Networks):** Mimicking human neural pathways, this is the "gold standard" for image analysis. It is exceptionally accurate at interpreting CT angiography and complex vascular scans.
- **Natural Language Processing (NLP):** This allows systems to "read" and extract vital information from unstructured text, like old discharge summaries or specialist reports.
- **Predictive Analytics:** By combining historical data with current patient metrics, these tools forecast specific outcomes, such as the likelihood of a cardiovascular event or an aneurysm rupture.

Practical Applications in Vascular Care

AI is currently moving the needle in several critical areas:

- **Aortic Aneurysm Assessment**

AI doesn't just measure the size of an aneurysm; it analyzes growth rates and wall characteristics. This shift from "size-based" to "risk-based" intervention allows for much more precise surgical timing having a major impact on interventions.

- **Carotid Plaque Characterization**

Identifying stenosis is only half the battle. AI can now distinguish between stable and vulnerable plaques. By assessing plaque composition, clinicians can better decide between aggressive medical management and surgical intervention to prevent stroke. We could avoid treating asymptomatic patients unless the plaque is vulnerable.



Dr P C Gupta

Clinical Director and HOD,
Vascular and Endovascular Surgery,
Vascular IR & Podiatric Surgery



Dr Vamsi Krishna Yerramsetty

Consultant - Vascular &
Endovascular Surgery



- **Atherosclerotic Disease Evaluation**

AI assists in mapping out total plaque burden and morphology across different vascular territories, providing a more holistic view of a patient's disease severity. We could decide how aggressively the patient should be treated.

- **Longitudinal Monitoring**

Tracking disease over time is often prone to human variability. AI-driven automated comparison of serial imaging ensures that even the smallest changes in disease progression are caught and tracked consistently over years of follow-up.

A Tool for Enhanced Expertise

AI isn't here to replace the clinician; it's here to do the heavy lifting of data processing. By standardizing the interpretation of complex cases and flagging high-risk patients earlier, it allows the clinical team to focus on high-level decision-making. It also serves as a powerful educational tool, helping trainees simulate scenarios and access structured clinical data instantly.

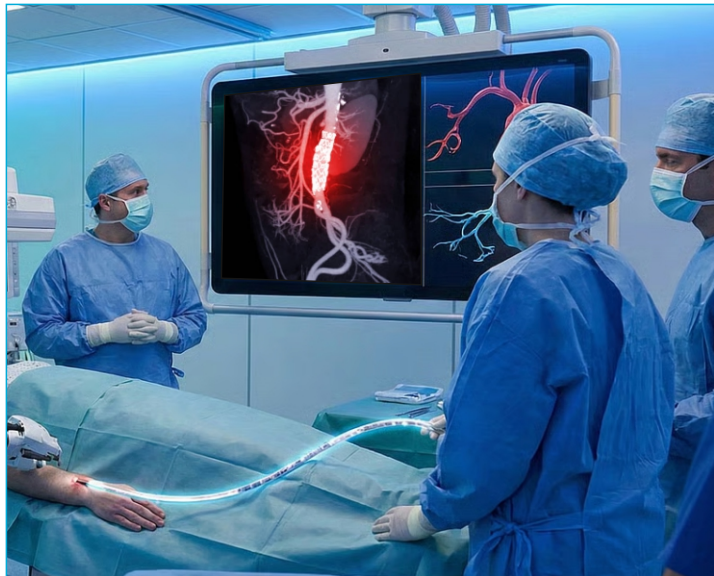
Navigating the Challenges

As powerful as these tools are, they have limits. AI outputs are only as good as the data they are trained on, and they lack the ability to understand a

Furthermore, we are seeing a rise in patients using "public" AI tools to self-diagnose. This can lead to unnecessary anxiety or a delay in seeking professional care. It's more important than ever for clinicians to lead the conversation, guiding patients toward reliable medical evaluation rather than automated summaries. On the other hand, we had a patient who had been seen by few physicians and it took ChatGPT for his son to realize that he need neurology evaluation and possibly a carotid endarterectomy.

The Bottom Line

In vascular medicine, where small margins in imaging can lead to vastly different outcomes, AI offers a path toward truly personalized care. By merging clinical expertise with these advanced analytical tools, we can ensure that innovation leads to safer, more informed, and patient-centered results.



Artificial Intelligence in HealthCare A Pragmatic Summarisation

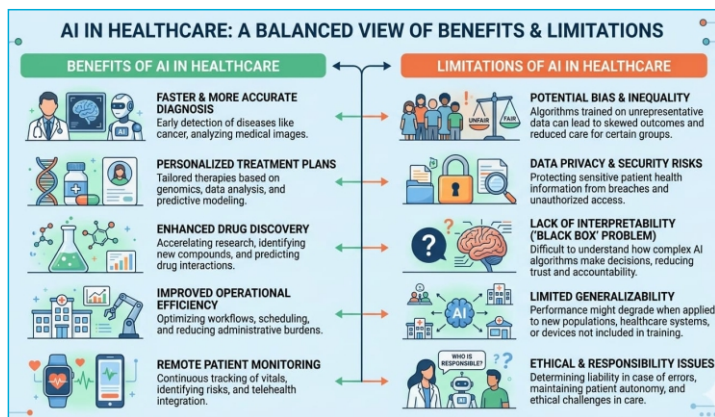
Artificial Intelligence is the capacity of computers or other machines to exhibit or simulate intelligent behaviour. The term “*Artificial Intelligence*” was introduced in 1955 and was established as a specialised field in 1956. Artificial Intelligence and its acronym, AI is currently the most recognised abbreviation, which is transforming our world in multiple ways. AI is everywhere! In the last few years, AI has evolved very rapidly and moved from research labs into hospitals faster than almost any modern technologies. It has the potential for a significant impact in almost every healthcare discipline, and its use is exponentially increasing in hospitals the world over. The most popular usage of AI presently are in interpretation to enhance the diagnostic accuracy of medical images, whole slide images, immunohistochemistry stains, haematology. Ambient AI, which involves listening to conversations between doctors and patients and transcribe the interactions as a case summary. Predictive models analyse patient’s data, which eases the processes of clinical evaluation by rapidly searching the medical records of the patients to flag the individuals needing further evaluation and generates patient-specific therapeutic options. Thus, AI is ushering in a paradigm shift and changing the ways, that healthcare is being delivered¹.

Many published studies have reiterated the accuracy of various healthcare-specific AI tools. Despite this tremendous momentum, the researchers are assessing the use of AI in healthcare, because even an accurate tool needs to show improvements in the various outcomes in comprehensive ways. In addition, patients feel more comfortable when the healthcare professionals provide the human element, touch, and empathy, which obviously lacks in an AI app. No machine has so far replaced this genuine “personal interaction” with a patient! Dr Eric Topol, a prominent American cardiologist, previously at Cleveland Clinic and now the founder-director of the Scripps Research Translational Institute is one of



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the world’s foremost global expert on AI in healthcare and future of medicine; in his recent publication, he highlights the potential risks of AI in clinical practice. He explains these threats as *de-skilling* (loss of existing skills), *mis-skilling* (adopting the errors and biases of AI systems) & *never-skilling* (failure to achieve competence by trainees)².



Dr Anna Goldenberg and Dr Jenna Wiens are both prominent researchers in the field of AI and machine learning in medicine and healthcare. Their recent article explores the disconnect between the rapid adoption of AI and the lack of clear evidence on patient outcomes. However, they also believe in the tremendous potential of AI in improving clinical care³.

Another recent article from MIT Technology Review describes the potential benefits, and critically evaluates the present limitations of the role of AI in healthcare, for various reasons, including the complex individual-specific biology⁴.

In India, multiple platforms enable the use of AI in healthcare. Apart from the various general AI apps from the various technology giants, there are also AI apps, which are specific to healthcare professionals. Popular ones for clinicians are Dr Oracle and Glass Health. However, every AI app comes with its own baggage of threats and risks, like bias, hallucinations as well as dangerous errors. Hence, clinicians ought to cautiously monitor AI outputs and correct obvious errors, with relevant prompts. A significant number of patients (or their relatives/friends) “interact” with various general AI apps provided by all the leading technology companies, and might even upload their records and laboratory results onto to these AI agents to obtain personalised responses and recommendations. However,

not all feedbacks might be in keeping with the standard, due to the inherent limitations mentioned above, and more importantly, AI have are known to prioritize helpfulness over accuracy⁴.

AI has evolved from experimentation into a model, which is proactive, data-driven, and a personalised system enhancing the diagnostic accuracy and therapeutic interventions, and in some studies have shown that they outperform clinicians on specific tasks. Like any modern technology, AI too has its own baggage of biases, threats and limitations and other disadvantages. Hence, it is incorrect to state that the future is all AI, or no AI, but somewhere in between. As healthcare professionals, we ought to be aware of these benefits and mindful of its downsides. A realistic way forward is knowing when the AI is significantly helpful, and when it is not!

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Pediatric Empyema: Why Earlier Decortication is Making Our Lives Easier

As pediatricians, we've all managed that dreaded "complicated pneumonia" case—the child who remains febrile despite triple antibiotics, with a chest X-ray that looks increasingly opaque. Historically, empyema management felt like a game of "wait and see," often starting with conservative chest tube drainage and hoping for the best.

However, the paradigm is shifting. Recent data and the 2026 IDSA/PIDS guidelines suggest that being proactive—specifically with early Video-Assisted Thoracoscopic Surgery (VATS) or decortication—is not just better for the patient; it's making the management process significantly smoother for us.

Shifting the Paradigm: From Drainage to Debridement

The traditional "staged" approach—antibiotics, then a small-bore tube, then fibrinolytics, and finally surgery as a last resort—often resulted in a protracted hospital course. We now know that fibrin deposition starts early. By the time we see loculations on ultrasound, the "honeycomb" structure is already preventing antibiotics from reaching the source.

Why early decortication (VATS) is winning:

- **Mechanical Success:** Unlike fibrinolytics, which require days of repeat dosing and "hoping" the septations break, VATS allows for the direct mechanical breakdown of loculations and the removal of the restrictive pleural peel in one sitting.
- **Predictability:** A definitive procedure on day 2 or 3 of admission often means the child is afebrile by day 5, whereas conservative management can leave you troubleshooting a blocked chest tube for a week or more.



Dr. Vittal Kumar Kesireddy
HOD & Sr. Consultant - Paediatrics



Decreasing the Hospital Stay

The most compelling argument for earlier surgical referral is the impact on the “length of stay” (LOS). Recent meta-analyses (2025-2026) show a clear trend:

- **VATS vs. Fibrinolytics:** Patients undergoing early VATS had a significantly shorter LOS compared to those on fibrinolytics (averaging 9.1 days vs. 11.5 days).
- **Tube Duration:** Chest tubes in surgical cases are typically removed within 3–5 days, compared to 9+ days in patients managed with tubes and tPA alone.
- **Resolution of Fever:** Post-operative fever settles nearly 48–72 hours faster after mechanical debridement.

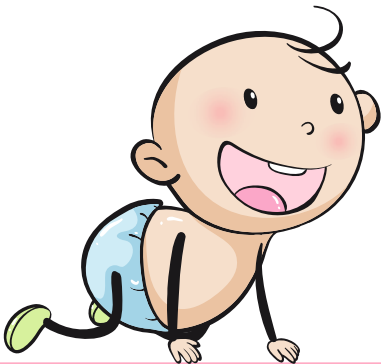
Why Management is Getting Easier

For the primary pediatrician, the “easier” management comes from a more streamlined clinical pathway. When we involve our surgical colleagues earlier (specifically within the first 48–72 hours of failed conservative therapy), we see:

- **Fewer “Mid-Course” Failures:** We avoid the secondary clinical deterioration that happens when a child “fails” fibrinolytics on day 7.
- **Clearer Milestones:** Post-VATS recovery is remarkably consistent. Once the lung is expanded and the drain is out, the path to discharge is straightforward.
- **Improved Long-term Outcomes:** Early intervention prevents the development of the thick, fibrous peel seen in Stage III empyema, which can lead to permanent lung entrapment and the need for a much more invasive open thoracotomy later.

The Takeaway for the General Pediatrician

The message for 2026 is clear: **Don’t wait for the “fail.”** If a child with empyema isn’t showing significant clinical improvement within 48 hours of a chest tube, or if imaging shows extensive loculation, an early referral for VATS/decortication is the most efficient route. It gets the child home faster, reduces family stress, and—frankly—makes our inpatient rounds much more rewarding.



VA vs VV ECMO: Choosing the Right Support for the Right Patient

Extracorporeal Membrane Oxygenation (ECMO) has transformed the management of critically ill patients with severe cardiac and respiratory failure. However, choosing between Veno-Arterial (VA) and Veno-Venous (VV) ECMO remains a crucial clinical decision that directly impacts outcomes.

Understanding the differences, indications, and common misconceptions is key to optimising patient care.

Understanding the Basics

VV ECMO is primarily a respiratory support system. Blood is drained from the venous system, oxygenated externally, and returned to the venous circulation, supporting gas exchange while the heart continues to function independently.

VA ECMO provides both cardiac and respiratory support. Oxygenated blood is returned to the arterial system, effectively bypassing both the heart and lungs, making it suitable for patients with hemodynamic instability or cardiac failure.

The distinction lies in what is failing: lungs, heart, or both.

A simple way to approach this: If the heart is stable, think VV. If the heart is failing, think VA.

Clinical Differentiation

VV ECMO is preferred when:

- Severe ARDS with refractory hypoxemia

- Hypercapnic respiratory failure

- Preserved cardiac function

VA ECMO is indicated when:

- Cardiogenic shock (e.g., acute MI, myocarditis)

- Cardiac arrest (ECPR scenarios)

- Combined heart and lung failure

- Post-cardiotomy failure or inability to wean from bypass

Case-Based Perspective

A patient with severe ARDS and refractory hypoxemia despite optimal ventilation, but with stable cardiac function, is best managed with VV ECMO, supporting oxygenation while allowing lung recovery.

A patient with acute myocardial infarction and persistent hypotension despite inotropes requires VA ECMO to maintain circulation and organ perfusion.

In post-cardiotomy patients who cannot be weaned from bypass, VA ECMO serves as a bridge to recovery or further intervention.

Common Misconceptions

“VV ECMO is simpler and always safer” is not always true. While it avoids arterial access, VV ECMO still requires precise management of oxygen delivery and recirculation.

“VA ECMO is only for cardiac cases” is also misleading. It is

often required in combined cardiopulmonary failure where both oxygenation and circulation are compromised.

Most importantly, ECMO is not definitive treatment. It is a bridge to recovery, decision, or advanced therapies—not a cure.

Making the Right Choice

The decision to initiate ECMO and select the right mode should be guided by the primary organ dysfunction, hemodynamic status, reversibility of the underlying condition, and institutional expertise.

Early recognition and timely initiation improve outcomes, while delayed or inappropriate selection may increase complications without benefit.

Conclusion

Choosing between VA and VV ECMO is not merely a technical decision—it is a clinical judgement based on physiology, timing, and patient-specific factors.

In critical care, clarity saves lives.

And in ECMO, the right support for the right patient makes all the difference.

Book Review

Dr Eric Topol is one of the foremost global experts in the field of AI in healthcare and future of medicine. A distinguished cardiologist and a scientist, he was the public face of the Cleveland Clinic, USA. He is the founder-director of Scripps Research Institute, an eminent center focussing on the various health challenges, which we as humans face in the 21st century. He is also a renowned author of multiple bestsellers.

As an experienced clinician and a researcher, Dr Topol provides a credible bridge between clinical medicine and evolving technology of artificial intelligence and machine learning, in his very informative book – DEEP MEDICINE – How Artificial Intelligence Can Make Healthcare Human Again.

The consensus among famed reviewers is that Deep Medicine provides an essential roadmap for the future of

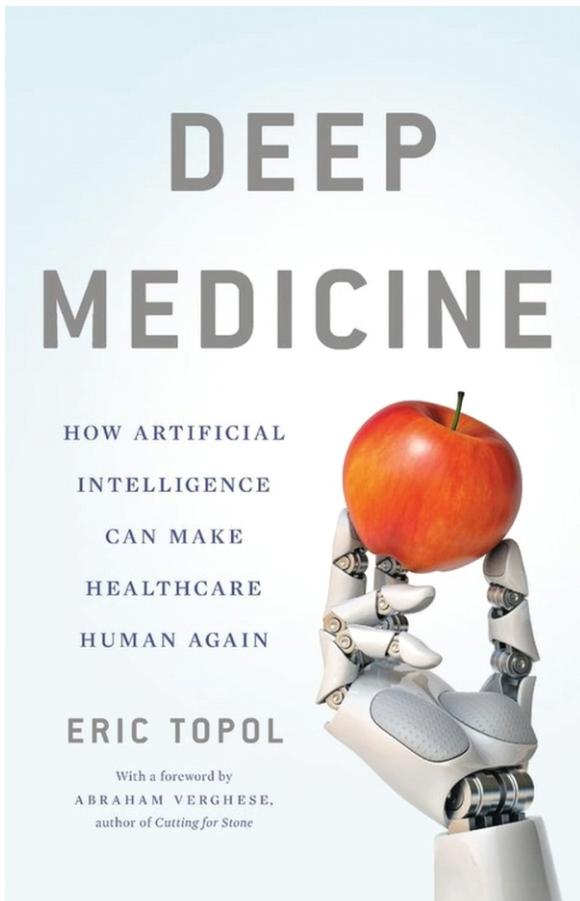
healthcare. The narrative moves the conversation away from sci-fi "robot doctors" and more toward a practical application where technology serves as a tool to restore the sacred doctor-patient relationship.

The ultimate goal of AI in medicine is to provide the time for human-to-human connection that was lost over the last few decades.

Dr. B. Ravinder Reddy

MS, FRCS (Edinburgh),
FRCS (Glasgow)

Gastrointestinal & General Surgeon



Silent Lifesavers: A Day in the Life of the Laboratory Team at CARE Hospitals, Banjara Hills

In healthcare, some of the most critical work happens far away from patient rooms and operating theatres. Behind every diagnosis, emergency intervention, and treatment decision is a team working quietly with speed, precision, and responsibility—the laboratory team.

At CARE Hospitals, Banjara Hills, the laboratory functions round the clock, ensuring that every sample is processed accurately and every critical value reaches the doctor without delay. From blood collection to final reports, lab professionals play a silent but vital role in patient care.

Where Every Day Begins: Quality First

The day starts with one priority—ensuring every system is functioning perfectly before the rush begins.

“Every morning, we first check maintenance, quality controls, and whether all instruments are functioning properly. Before anything else, we make sure critical values are being informed to the doctors without delay.”

Preventive checks are non-negotiable. Equipment maintenance, calibration, temperature monitoring, and quality controls are completed before routine processing begins.

Only after confirming that the lab is fully prepared does the team move into the day's

testing workflow.

From Sample Collection to Diagnosis

The process may look simple from the outside, but every step requires precision.

Once the patient completes billing, samples are collected with barcode identification and sent to the central laboratory. The team checks whether the samples are properly collected and labelled before processing begins.

After centrifugation and testing, provisional results are reviewed carefully before final reports are released.

“We run quality controls before releasing any report. If there is any abnormality, we recheck and confirm before final reporting.”

Because in healthcare, one incorrect report can change everything.

Urgent Means Immediate

Not every sample can wait.

Emergency samples are always given priority over routine testing, especially for ICU patients, code blue cases, and critical care units.

Separate handling protocols ensure urgent samples move faster through the system. “If an urgent sample comes, we process that first. Different technicians are assigned quickly so the work moves faster without affecting patient care.”

In many cases, a few minutes can make a major difference.



Handling Breakdowns Without Breaking Care

One of the biggest challenges in laboratory medicine is managing instrument failures without delaying patient treatment.

“If there is an instrument breakdown, we immediately decide which samples should be shifted to another machine, which urgent tests need priority, and how to avoid reporting delays.”

These decisions happen quietly, often without patients ever realising how much coordination is happening behind the scenes.

That invisible efficiency is what keeps the hospital moving.

The Human Side of Laboratory Work

Even for team members working directly in sample collection, accuracy and compassion go hand in hand. “We first check the patient details, confirm the name, match the bill, apply the barcode, and then collect the sample. For urgent cases, we immediately inform the lab and ensure faster processing.”

Simple steps—but each one matters.

From gloves and masks to infection control protocols, safety is maintained at every level.

A Message Beyond the Machines

The most important lesson in laboratory medicine goes beyond technical skill.

“Every patient should be treated like your own family member. If you work with that mindset, you will automatically do better—for the patient, for the doctor, and for the hospital.”

That philosophy defines the laboratory team at CARE Hospitals, Banjara Hills.

Because while patients may never meet the people behind their reports, these professionals are often the reason treatment begins on time, decisions are made correctly, and lives are saved.

Sometimes, the quietest work carries the greatest impact.



Restoring the Gift of Hearing: 2,000+ Lives Reconnected Through Micro Ear Surgery (Stapedotomy) at CARE Hospitals, Banjara Hills

CARE Hospitals, Banjara Hills has achieved a significant milestone in hearing restoration, with over 2,000 successful stapedotomy surgeries performed under the leadership of Dr. N. Vishnu Swaroop Reddy, Clinical Director, Head of the Department and Chief Consultant – ENT, Facial Plastic and Cochlear Implant Surgeon. This accomplishment reflects both clinical expertise and the institution's commitment to advanced otological care.

Otosclerosis, a frequently underdiagnosed yet treatable condition, leads to progressive fixation of the stapes bone in the middle ear, resulting in gradual hearing loss. It can affect individuals across age groups and is more common in women, often worsening during pregnancy. The condition may involve both ears and can significantly impact communication and quality of life if left untreated.

The surgical series includes not only patients with otosclerosis but also children with congenital conductive hearing loss, individuals with Osteogenesis Imperfecta, and other rare conditions, highlighting the complexity and diversity of cases managed at CARE Hospitals.

Stapedotomy is a highly delicate microscopic procedure in which the immobilised stapes bone is replaced with a precision micro-prosthesis, restoring

sound transmission. When performed with expertise, the procedure can result in immediate hearing improvement on the operating table, under local anaesthesia for adults and can avoid hearing aids.

Dr. Reddy's first 1,000 cases were presented at the Asia Oceania Congress of ENT Surgeons in 2019 and later published in the Journal of Laryngology and Otology in 2021. This publication represents the largest reported stapedotomy series from India and the second largest internationally, with among the highest documented success rates.

Following international recognition, CARE Hospitals, Banjara Hills has continued to attract patients from across India and abroad, leading to the completion of an additional

completion of an additional 1,000 successful surgeries over the past six years.

This milestone underscores the growing strength of CARE Banjara as a centre of excellence in micro ear surgery and cochlear implant services, delivering consistent outcomes and restoring hearing and quality of life for thousands of patients.



Dr. N Vishnu Swaroop Reddy

Clinical Director, Head of the Dept & Chief Consultant E.N.T and Facial Plastic Surgeon



Funtastic Facts

- **AI Can Read Images in Seconds**

AI algorithms can analyse CT scans and X-rays within seconds, flagging critical findings such as bleeds, fractures, or lung abnormalities to assist clinicians in faster decision making.

- **Not a Replacement, but an Enhancer**

AI does not replace doctors. It enhances clinical judgement by processing large volumes of data, identifying patterns, and reducing human error in repetitive tasks.

- **Learning from Data, Not Instinct**

Unlike humans, AI improves by analysing vast datasets. The more high-quality data it processes, the more accurate and reliable its outputs become.

Murphy's Law: AI Edition

In AI-enabled healthcare, Murphy's Law still finds its place.

The system that works flawlessly all day will prompt for an update just before a critical case. The algorithm that detects rare findings will flag something unexpected in the most routine scan. And the one time everything is perfectly streamlined, the network will decide to slow things down.

AI may bring speed and consistency, but clinical care continues to depend on human oversight, adaptability, and judgement.

Innovation

Intelligent Healthcare Systems

AI is shaping the next phase of healthcare delivery.

In radiology, AI-driven tools assist in detecting early disease and triaging urgent cases. In laboratory medicine, AI supports quality control, anomaly detection, and faster validation of results. Predictive analytics models are now being used to identify patients at risk of deterioration, enabling earlier intervention.

These systems are moving healthcare toward a more proactive model, where risks are identified early and care is delivered with greater precision.

Medical Humour

- AI never gets tired, never gets distracted, and never misses a pattern.

It also never gets asked by a patient, "Doctor, is this serious?"

- **Why doesn't AI get tired in healthcare?**

Because it doesn't do night shifts... it just keeps processing.

- AI can analyse thousands of images in seconds.

It still waits for someone to say, "Clinically correlate."



Serendipity

From Data to Decision

What began as an experimental tool has rapidly evolved into a powerful clinical ally.

AI entered healthcare through imaging and data analytics, initially assisting with pattern recognition. Over time, its role has expanded into diagnostics, workflow optimisation, and predictive analytics. Today, AI supports clinicians by reducing reporting time, improving accuracy, and helping prioritise critical cases.

This evolution reflects a larger shift where data is no longer just recorded, but actively used to guide timely and informed decisions.

ABOUT CARE HOSPITALS

CARE Hospitals, one of India's leading healthcare providers, is committed to delivering world-class medical services across a range of specialties. With a strong focus on patient centered care, innovation, and community health initiatives, CARE Hospitals continues to play a pivotal role in advancing healthcare standards in India. CARE Hospitals Group operates 17 healthcare facilities serving 7 cities across 6 states in India. The network has its presence in Hyderabad, Bhubaneswar, Visakhapatnam, Raipur, Nagpur, Indore & Aurangabad. A regional leader in South and Central India and counted among the top 5 pan-Indian hospital chains, CARE Hospitals delivers comprehensive care in over 30 clinical specialties, with over 3000+ beds.

TESTIMONIALS

ABDUL RAFI

Very very happy to recover my wife doctor Muqurab Ali Khan sir urologist CARE hospital Banjara Hills, Hyderabad.

SRIDEVI C

Dr PLN Kapardhi sir very care kind and responsible doctor known to us above 25 years. Most of our family members are under his treatment only. We are all very much thankful to Kapardhi sir. His words give so much positive energy to us. Once again thanks to Dr Kapardhi sir

SUBHASHINI

Doctors had extended excellent treatment, caring and patience. The other staff are also so good but some nursing staff didn't follow the doctors instructions. Room service is also good. Attendant bed may be better

AWARDS



ACCREDITATIONS



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