



## DEMYSTIFYING AI

— THE RISE OF EXPLAINABILITY OF AI IN HEALTHCARE



## Introduction

### Background

Artificial Intelligence (AI) is rapidly transforming the healthcare landscape, offering unprecedented capabilities in diagnostics, drug discovery, patient engagement, and operational efficiency.

However, despite its promise, the adoption of AI in clinical settings remains cautious. A significant barrier is the lack of explainability - the ability to understand and trust how AI systems arrive at their decisions. In a domain where lives are at stake, transparency is not just a technical requirement but a moral imperative.

### Objective

This paper explores the growing importance of Explainable AI (XAI) in healthcare and how it can bridge the trust gap between technology and clinical practice.

## The AI Paradox in Healthcare | Promise vs. Trust Deficit

Key impact areas and barriers to AI integration in healthcare

“ As AI continues augmenting the expertise of healthcare professionals, look for it to go further and do nothing less than enhance humanity.

- Fei-Fei Li, PhD, Co-Director of Stanford Institute for Human-Centered AI (HAI), at the RAISE Health Symposium by Stanford Medicine and HAI

### Key Areas of Impact



**Clinical diagnostics**  
(e.g., radiology, pathology)



**Predictive Analytics** for patient outcomes



**Drug discovery and Genomics**



**Virtual Health Assistants and Patient Engagement Solutions**

40% ↓

Diagnostic errors with AI in Radiology and Pathology by improving image analysis accuracy

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30-50% ↓

Drug Development Timelines

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20% ↓

Operational Costs in Healthcare Organizations

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20-30% ↓

Hospital Readmission

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~70%

Patient queries can be handled by AI-driven Virtual Assistants

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However, only 48% of clinicians use AI tools for work, and most rely on generalist tools like ChatGPT rather than clinical-specific AI.

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Concerns Over Transparency and Explainability on how decisions are made



Lack of Consensus on what constitutes trust in AI



Fear of Misinformation, Misdiagnosis and Inaccuracy of data



Limited Institutional Support and Training, and Lack of Awareness

## The Trust Equation | Explainable AI + Consulting = Adoption





Why explainable AI matters and how Consulting makes It real

“ Without trust, the full promise of AI in healthcare cannot be realized. Building trust requires a responsible, people-centered approach - one that puts collaboration at the heart of AI innovation.  
- Philips Future Health Index 2025 Report

### Why Explainability of AI matters in Healthcare


	Fosters trust and encourages adoption
	Enhances Diagnostic Confidence
	Improves Model Debugging and Refinement
	Supports Ethical and Fair Decision-Making
	Facilitates Clinician-Patient Communication
	Aids in Regulatory Compliance
	Encourages Responsible AI Deployment


### The Consulting Opportunity

	Designing AI Governance Frameworks that prioritize Interpretability
	Selecting or Building Explainable-by-Design Models to support transparency
	Embedding Explainability throughout the Model Lifecycle
	Facilitating AI Literacy and Change Management in clinical teams

## Making it Real | Tactics, Tools & Success Stories

Technology enablers and success stories driving AI trust

 **Selecting or Building Explainable-by-Design Models to support transparency**

 **Embedding Explainability throughout the Model Lifecycle**

- ✓ Choose **inherently interpretable models** when possible (e.g., decision trees, linear models, rule-based systems)
- ✓ Use **model constraints or regularization** to simplify complex models and improve interpretability.
- ✓ Apply **surrogate models** (e.g., train a decision tree to approximate a black-box model) to provide explanations.
- ✓ Balance **performance and interpretability** by evaluating trade-offs using business context and risk exposure.

- ✓ Ensure **feature selection and transformations are documented** and interpretable.
- ✓ Integrate **explainability metrics** (e.g., feature importance, SHAP values) into evaluation criteria.
- ✓ Use **explainability tools to validate model behavior** across different cohorts and edge cases.
- ✓ Track **model drift and explanation consistency** over time to ensure continued trustworthiness.

### Technology Enablers



### Industry Spotlights

- ✓ Pfizer accelerated clinical trials and improved compliance by using AI models that offer real-time, explainable insights into trial execution.
- ✓ AstraZeneca leveraged an explainable AI platform for drug discovery, enabling transparent insights that led to faster identification of novel drug targets.

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## Conclusion

- Explainability is no longer optional in healthcare AI, it is essential. As AI continues to augment clinical expertise, its success will depend on how well it can be understood, trusted, and integrated into human-centered care.
- By prioritizing explainability, healthcare organizations can unlock the full potential of AI while ensuring ethical, safe, and effective outcomes.



The future of AI in healthcare lies not just in what it can do, but in how clearly it can show us why.

## About the Authors:



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Bilay is a seasoned Business Consultant with over 11 years of experience, specializing in business analysis, strategic consulting, and functional solutioning. He brings deep expertise in translating business needs into actionable insights, requirements elicitation, and stakeholder engagement. Bilay has worked extensively across the Healthcare and Life Sciences domains, contributing to transformative initiatives in digital enablement, workflow optimization and automation and data management.



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Astha is a Principal in Infosys Consulting's Life Sciences practice with over 15 years of experience. She has led large-scale digital strategy and transformation programs across industries including consumer healthcare, oil and gas, and consumer products.



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Inder is Partner at Infosys Consulting and leads the Life Sciences unit. With over 18 years of consulting expertise, he specializes in Listening, Communication and Solutioning business objectives with practical implementation. Inder likes to simplify complex information, develop effective frameworks, and streamline delivery through change management and operational effectiveness.



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## ABOUT INFOSYS CONSULTING

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